HAM RADIO OUTLET®

WORLDWIDE DISTRIBUTION

Spring/Summer 1998

Communication Equipment Catalog

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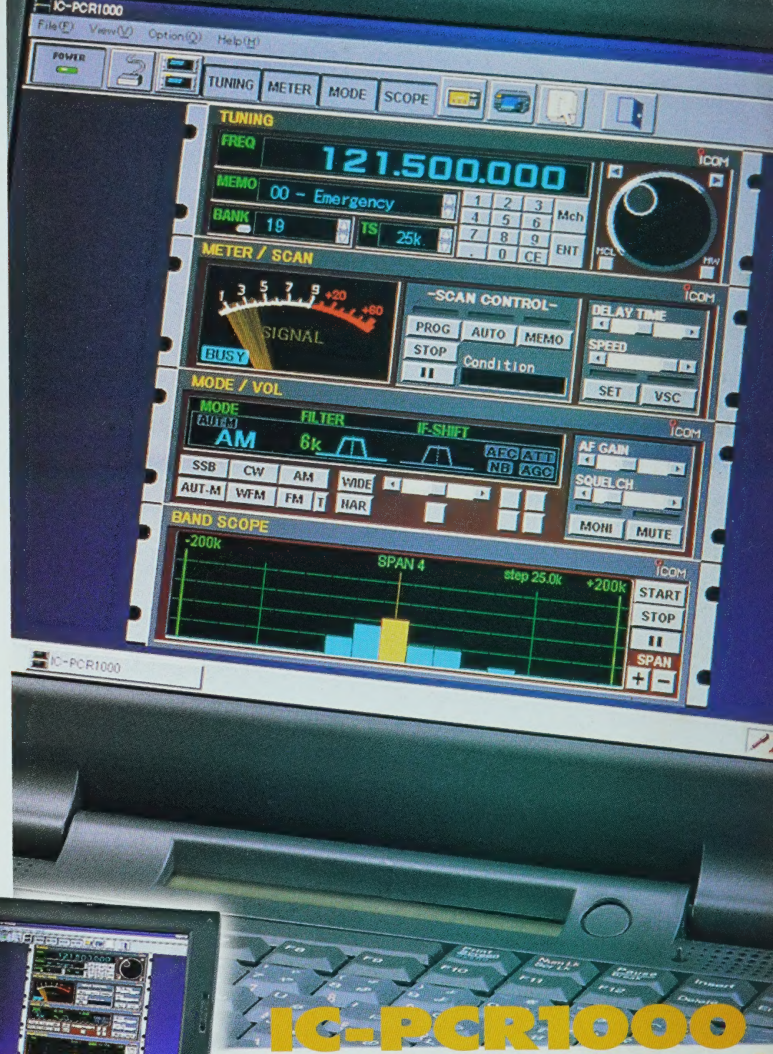
Serving You From Twelve Locations

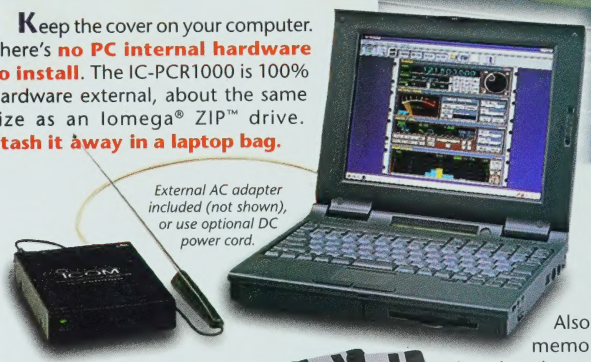
WORLD WIDE RADIO

IN A LITTLE BLACK BOX



Combine powerful listening performance with go-anywhere PC convenience. ICOM's IC-PCR1000 wide band **multimedia** receiver is now available.

Keep the cover on your computer. There's **no PC internal hardware to install**. The IC-PCR1000 is 100% hardware external, about the same size as an Iomega® ZIP™ drive. **Stash it away in a laptop bag.**



External AC adapter included (not shown), or use optional DC power cord.

IC-PCR1000

100% PC External World Wide Receiver

Designed for **Windows® 3.1** *and* **Windows® 95.**

Take the black box with you to work, to school, on business trips, even while out camping or on a boat. **Listen to receiver activity while working in foreground applications.**

The big reception on this little radio will surprise you. Monitor **500 kHz – 1300 MHz*** on **all modes** (AM/FM/WFM/SSB/CW).

Also enjoy: unlimited memory channels, real time band scope, tone squelch (CTCSS) decode, 5 DTMF memories for advanced remote computer control, a 9600 baud data connection point for third party applications (like weather fax), and **optional DSP**.

Everything's included to get you started. And the latest software is always available for free downloading on the ICOM America web site. To get it, and to find your nearest authorized IC-PCR1000 dealer, visit the ICOM America website at: **www.icomamerica.com**

ICOM®

Makers of the world's best radios for over 40 years.

Dealer and value added reseller inquiries welcome. IC-PCR1000 architecture open to approved third parties only.
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ADI

Mobiles

AR-146
2 Meters
$319.00

AR-446
440 MHz
$345.00
Suggested List Prices

HRO Discount Prices
AR-146: $199.95
AR-446 - $329.95

The AR-146 covers 2m and the AR-446 is for 70 cm.

- 40 memory channels plus one call channel.
- Band scan, memory scan, program scan.
- DTSS with page function.
- 41 independent CTCSS memory setup functions.
- Programmable VFO.
- Multifunctional microphone with DTMF keys.
- 3-position RF output power control.
- 50 W maximum out for AR-146; 35 W for AR-446.
- Auto power off function.
- 30 minute time-out transmission timer.
- S-meter squelch.
- Dual watch operation.

- The following are built-in to the radios:
  CTC 146 – CTCSS unit
  DTS 146 – DTMF unit

Handelds

220 MHz

HRO Discount Price $TBA

NEW!

PR-222
$TBA
Suggested List Price

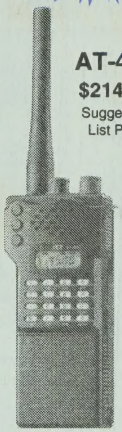
Available soon! The PR-222 is a compact, rugged radio that offers 5 watts of output on 1.25 meters.

- Receive 218-220 and 222-224 MHz.
- Transmit 222-224 MHz.
- 5 watts out with rechargeable NiCad battery included.
- CTCSS encode.
- 5-character display.
- 40 memories.
- Store different CTCSS and repeater shifts in each memory.
- Programmable repeater shift.
- 16-button keypad with DTMF encode.
- Frequency steps: 5, 10, 12.5, 15, 20, 25 kHz.
- Repeater reverse.

PR-222 - This device has not been approved by the Federal Communications Commission. This device is not and may not be offered for sale, lease or sold or leased until the approvals of the FCC have been obtained.

440 MHz

HRO Discount Price $179.95



AT-400
$214.00
Suggested List Price

The AT-400 transmits on the 70 cm band and receives 400-480 MHz. It has output power up to 5 watts using the optional battery or external 13.8 V power supply.

- 20 memories.
- 16-digit DTMF tone pad with monitor.
- CTCSS encode / decode included.
- Programmable non-standard shifts.
- VFO / memory scan.
- Battery save; automatic power off.
- Dual frequency watch.
- Backlit LCD display and DTMF pad.
- One-touch open squelch check.

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Dualband

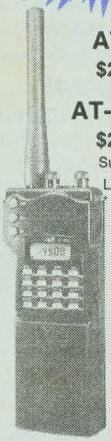
HRO Discount Prices
AT-600 $259.95
AT-600-HP - $299.95

AT-600
$369.00
Suggested List Price

- Simultaneous reception on 2m and 70cm.
- Crossband repeater function.
- Amateur transmit / receive coverage plus extended range reception. AM receive from 108-137 MHz AM (aircraft), 138-174 MHz FM, 330-499 MHz FM, 896-999 MHz FM.
- MARS / CAP capable.
- 200 memories (120 with alphanumerics).
- Up to 5 W with 12 VDC battery.
- Clones other AT-600's and is PC programmable with optional software.
- CTCSS encoder / decoder built-in.
- CTCSS tone scan.
- DTMF tone grab.
- Backlit keypad.

2 Meters

HRO Discount Prices
AT-201 - $149.95
AT-201HP - $199.95



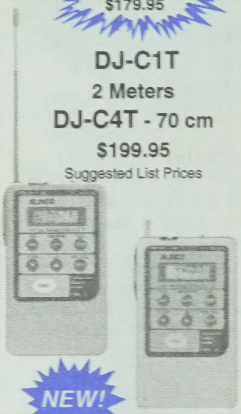
AT-201
$229.00

AT-201-HP
$249.00
Suggested List Price

- The AT-201 transmits 144-148 MHz and receives 130-179 MHz. By using a simple "keypad mod," the receive range extends from 100–180 MHz.
- Backlit key pad.
- 40 memories are soft-sectored as 20 memories in each of 2 banks. Memories store any transmit offset and CTCSS tone.
- Automatic repeater offset is featured for quick operation. Just enter the desired frequency and plus or minus.
- Full range or 1 MHz scanning is available.
- Memory group scanning allows scanning a 10 memory group or all 40 memories.
- Display shows either channel or frequency.
- Can be cloned using a hardware key.
- Compatible with all AT-200 / 400 accessories.

Micro HTs

HRO Discount Price $179.95



DJ-C1T
2 Meters
DJ-C4T - 70 cm
$199.95
Suggested List Prices

NEW!

Never before has a transceiver this small offered all these features. Only about the size of a credit card, the DJ-C1 and DJ-C4 have 300 mW of efficient and effective output to reach your local repeaters or to accommodate your local simplex communications needs. The DJ-C1T transmits on the 2 m band with extended receive 118 to 173.995 MHz. The DJ-C4T transmits and receives 420 to 449.995 MHz.

- Earphone included.
- 20 memories + call channel.
- CTCSS encoder
- Multiple scan functions.
- Auto power off.
- Battery save mode.
- AM receive for aircraft (DJ-C1T).

Call for HRO's Low Discount Prices

DJ-S41T
440 MHz -
$149.00

DJ-S11T
2m - $149.00
Suggested List Prices

These tiny communicators cover 2 meters or 440 MHz. Operate from your car with the optional EDH-18.

- Transceive on 144-148 MHz (DJ-S11T); 425-450 MHz (DJ-S41T).
- 20 memories plus call channel will hold frequency, 50 CTCSS tones and offset.
- Less than 5" high and 2.25" wide.
- Use 3 AA or NiCad battery pack.
- Power out 340 mW.
- Large illuminated display.
- Antenna pivots for storage.

Family Radio

NEW!

DJ-S46T
Family Radio
$119.95
HRO Discount Price

No license required to use this Family Radio Service hand-held. It offers 14 channels with scan, page tone, 340 mW output power, 50 CTCSS tone encoder. Runs on 3 AA batteries or NiCads. Great for family outings.

HRO Discount Prices DJ-191T-$189.95 DJ-191TH-$209.95

DJ-191T
2-Watt 2m -
$235.00

DJ-191T-HP
5-Watt 2m
$264.95
Suggested List Prices

The DJ-191 features simple operation and durable, slim-line technology. It has a huge display and effortless entry.

- Receives 135-173.995 MHz.
- Includes CTCSS encoder, DTMF squelch encoder and decoder.
- Large, lighted LCD display.
- 1.5 W out with standard battery. 5 W with 9.6 VDC or optional EBP-36N battery.
- 40 memory channels plus call channel store frequency, offset, shift direction, tone information, power level, DSQ setting.
- Seven channel steps: 5, 10, 12.5, 15, 20, 25, and 30 kHz.
- 9 auto dialer memory channels with redial.
- Cloning capability.
- Automatic power off.

DJ-190T $159.95 **DJ-190TH** $169.95
HRO Discount Prices

The DJ-190 is identical to the DJ-191 in every way except it does not have a DTMF keypad.

Dual-band

HRO Discount Price $329.95

DJ-G5TH
$429.95
Suggested List Price

This rugged, mini-sized, rig is loaded with features.

- Full-duplex, cross-band repeater capability.
- 5 watts out on VHF/UHF with 13.8 VDC.
- Built-in CTCSS encoder / decoder.
- 80 memory channels.
- ChannelScope™.
- Auto dialer with up to 20 memories.
- Receives FM 108-173.995 & 420-470 MHz. Receives AM on 108-173.995 MHz.
- Airband receive.
- Memory scan, band scan, or programmed scan.
- Cloning function.
- Tone burst function.
- Low battery indicator, automatic power off, and time out timer (TOT).

HRO Ships From the Store Nearest You

Alinco Handheld Specifications

Model	Frequency Range	Power	Current Drain Xmit	Current Drain Rec	Power Out **	Memories	Ant Z	Mike Z	Sensivity	Height in	Width in	Depth in	Weight lbs
DJ-C1T	2 m	3.7 VDC	240 mA	30 mA	300 mW	20	50 Ω	2k Ω	<.15 µV at 12 dB	3.7	2.2	0.4	0.17
DJ-C4T	440 MHz	3.7 VDC	300 mA	35mA	300 mW	20	50 Ω	2k Ω	<.15 µV at 12 dB	3.7	2.2	0.4	0.17
DJ-G1T	2 m	13.8 VDC	1.5 A	120 mA	5 W	80	50 Ω	2k Ω	<.15 µV at 12 dB	4.5	1.9	1.4	0.79
DJ-G5TH	2m / 440 MHz	13.8 VDC	1.4 A	85 mA	5 W	80	50 Ω	2k Ω	<.16 µV at 12 dB	5.4	2.24	1.1	0.77
DJ-191T	2 m	13.8 VDC	1.5 A	24 mA	1.5 - 5 W	40	50 Ω	2k Ω	<.16 µV at 12 dB	6	2.25	1.08	0.66
DJ-191T-HP	2 m	13.8 VDC	1.5 A	24 mA	1.5 - 5 W	40	50 Ω	2k Ω	<.16 µV at 12 dB	6	2.25	1.08	0.66
DJ-S11T	144-148 MHz	4.5 VDC	250 mA	33 mA	340 mW	20	50 Ω	2k Ω	<.15 µV at 12 dB	3.93	2.16	1.1	0.41
DJ-S41T	425-449.995 MHz	4.5 VDC	250 mA	33 mA	340 mW	20	50 Ω	2k Ω	<.15 µV at 12 dB	3.93	2.16	1.1	0.41

† Optional upgrades to 50 or 100 memories. ** Power output is determined by choice of battery pack.

Receiver

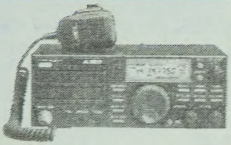
NEW!

DJ-X10T
All Mode Scanning Receiver
$TBA
HRO Discount Price

- Tunes 100KHz to 2 GHz (cellular blocked).
- 1200 memories.
- AM, NFM, WFM, SSB, CW modes.
- Alphanumeric channel designation.
- PC programmable.
- Dual VFOs.
- Internal "Help" function.
- ChannelScope™ spectrum display.

DL-X10T - This device has not been approved by the Federal Communications Commission. This device is not and may not be offered for sale, lease or sold or leased until the approvals of the FCC have been obtained.

HF Transceiver

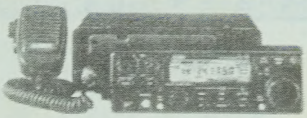


DX-77T
$949.95
HRO Discount Price

The DX-77T transmits on ham bands 10 – 160 m in SSB, CW, AM, FM, and data, and has a general coverage receiver 150 KHz – 30 MHz.

- Output on SSB, CW and FM is 100 watts; on AM, 40 watts.
- 100 memory channels each store mode, split, frequency, AGC, RF attenuation, or gain.
- Two VFOs plus memory operation mode.
- Built-in speech processor, IF shift, CW audio filter.
- Computer control with optional ERW-4.
- Built-in electronic keyer.
- Full QSK, 7-step semi break-in, or auto break-in CW modes.
- CTCSS tone access for 10m FM.
- Convenient front panel jacks for key, headphones, or external speaker. Rear panel connectors for external amplifier, antenna, EDX-2 antenna tuner, power, computer control.

HF & 6 Meters



DX-70T **$799.95**
DX-70TH **$899.95**
HRO Discount Prices

- Includes general coverage receiver.
- All-mode.
- 100 W output from 1.8-30 MHz.
- Output on 6 meters: 10 watts on the DX-70T; 100 watts on the DX-70TH.
- CTCSS for 6 and 10 meters.
- Dual VFO.
- 100 memory channels.
- 10 memory group scans.
- Detachable control head for remote mounting aids in mobile installations.
- Full QSK and auto break-in for CW operation.
- Built-in narrow band filter.
- Built-in RF preamplifier, speech processor, and noise blanker.
- Size 2.25"(H) x 7"(W) x 9"(D).

Handheld Accessories

	DESCRIPTION	F1T	F1T-HP	G1T	162 TD	162 T	180T 180T-HP	191T 191T-HP	560 TA	S11 S41	580 T	HRO Price
EBP-22N	Ni-Cd Battery (12V 700 mAh)										*	$70.95
EBP-24N	Ni-Cd Battery (7.2V 1200 mAh)						*					$78.95
EBP-26N	Ni-Cd Battery (7.2V 700 mAh)						std					$41.95
EBP-28N	Ni-Cd Battery (12V 700 mAh)						*					$68.95
EBP-33N	Ni-Cd Battery (4.8V 650 mAh)							*				$63.95
EBP-34N	Ni-Cd Battery (4.8V 1200 mAh)							*				$82.95
EBP-35N	Ni-Cd Battery (7.2V 900 mAh)							*				$95.95
EBP-36N	Ni-Cd Battery (9.6V 650 mAh)							*				$67.95
EBP-37N	Ni-Cd Battery (4.8V 700 mAh)							*				$34.95
EBC-6	Mobile Bracket			*			*	*		*		$22.95
EDC-37	13.8 volt power cable			*				*			*	$7.95
EDC-43	Cigarette Lighter Cable										*	$8.95
EDC-45	Quick Charger	*	*		*	*	*		*		*	$99.95
EDC-49	Wall Charger						*				*	$23.95
EDC-60	Rapid Charger							*				$94.95
EDC-63	Wall Charger							*				$24.95
EDH-11	Dry Cell Case						*					$10.95
EDH-12	DC Jack Adaptor for ext pwr						*					$10.95
EDH-16	Dry Cell Case							*		*		$10.95
EJ-14U	50 Memory Channel Unit						*					$21.95
EJ-15U	200 Memory Channel Unit						*					$29.95
EJ-16U	Tone Squelch Unit			*								$57.95
EJ-28U	CTCSS Decoder Unit							*				$42.95
EME-4	Ear/microphone w/PTT			*							*	$34.95
EME-6	Earphone			*				*			*	$11.95
EMS-2Z	Speaker Microphone				*	*			*			$44.95
EMS-8Z	Remote Control Speaker Mic	*	*	*							*	$48.95
EMS-9	Speaker Microphone			*			*	*		*		$44.95
EME-12	Headset w/ear hook VOX & PTT			*			*	*		*		$70.95
EME-13	Headset with VOX			*			*	*		*		$70.95
EME-15	Tie pin microphone						*					$55.95
ESC-18	Leatherette Case EBP-24N						*					$14.95
ESC-19	Leatherette Case EBP-28N						*					$16.95
ESC-23	Soft Case (EBP-30N)			*								$21.95
ESC-24	Soft Case (EBP-31N/32N)			*			*					$10.95
ESC-28	Soft Case (EBP-37N)							*				$10.95
ESC-29	Soft Case (EBP-33N)							*				$10.95
ESC-30	Soft Case (EBP-34N/35N/36N)							*				$10.95

6 Meters

DR-MO6TH
6 Meter Mobile / Base
$319.95
HRO Discount Price

- New higher output - 20 watts.
- 100 memory channels.
- CTCSS encoder included.
- Full 6m band coverage.

Accessories

DM-340MVT Power Supply

Provides 35 amps peak, 30A nominal. Variable output 1-15 VDC. Convenient front panel connections. **HRO Price $159.95**

EDX-2 Automatic Tuner

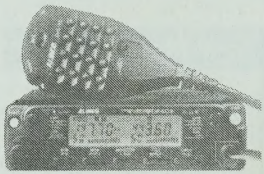
Mates with DX-70/77 radios. Tunes wire antenna 8-80ft. Use for base, mobile, or marine. **HRO Price $319.00**

Dual Band Mobiles

DR-610T – $499.95
DR-610TQ – $539.95
HRO Discount Prices

The 2m / 70 cm DR-610T is ideal for mobile or base station operation. Mount the front panel away from the radio if you wish.

- 50 watts VHF / 35 UHF.
- Built-in duplexer.
- Built-in CTCSS tone encoder. Decoder is optional in T; built in to TQ.
- Extended Receive Range: 108-174 MHz (including AM) and 420-470 MHz.
- Two VFO's.
- Airband receive standard.
- Band, programmed, or memory scan.
- 5 channel auto dialer.
- 120 memories
- 9600 bps ready with built-in I/O jack.
- ChannelScope™.
- Cross band repeater function.



DR-605T
$399.95
DR-605TQ
$429.95
HRO Discount Prices

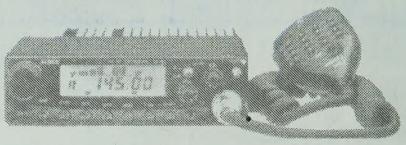
The DR-605 models are 2m / 70 cm transceivers.

- 50 watts VHF and 35 watts UHF.
- Built-in duplexer.
- Built-in CTCSS tone encoder. Decoder is optional in T; built in to TQ.
- Extended Receive Range: 136-174 MHz (including AM) and 420-470 MHz.
- Channelized display.
- 9600 BPS ready.
- Cross band repeater function.
- Crossband memory.
- Band, programmed, or memory scan.
- 50 memory channels per band memories plus call channel.
- Tone burst function (1450, 1750, 2100 Hz)

Single Band Mobiles

DR-150T
2m – $269.95

DR-150TQ
2m – $279.95
HRO Discount Prices



- 50 watts high output, 25 watts medium, and 10 watts low.
- Receives 108 to 173.995 MHz and 440 to 449.995 MHz.
- Transmits on 144 to 147.995 MHz.
- Two VFO's.
- Channel Scope (Visual Search™).
- 100 memory channels.

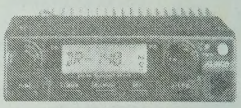
TQ Models
Have encode and decode tone squelch board built-in.

PKT Models
For Packet radio only. Includes packet cable, but NO microphone, NO bracket.

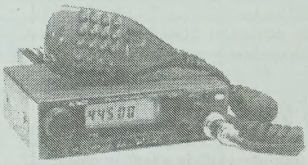
DR-140T
2m – $219.95

DR-140TQ
2m – $229.95

DR-140TPKT
2m – $199.95
HRO Discount Prices



- 51 memory channels storing splits and CTCSS tones.
- Cable cloning.
- Alphanumeric display with up to seven characters.
- Aircraft band receive with automatic shift to AM.
- Channel number display.
- Tone burst included.



DR-430TQ
440 MHz
$279.95
HRO Discount Price

- 35 watts RF output with a HI / LO switch.
- Encode and decode tone squelch board built-in.
- 20 multifunction memories are fully programmable. Expand to 100 memories with optional EJ-19U.
- Built-in programmable encode and optional decoder allow restricted access.
- Highly visible color LCD display.

Alinco Mobile Accessories

Model	Description	DR-M06	DR-130T DR-430T DR-M06T	DR-140T	DR-150T	HRO Price
EJ-19U	Memory Expansion		*			$28.95
EJ-20U	Tone Squelch Unit	*	*	*	*	$41.95
EMS-11	Remote Control Mike/ DTMF		std			$50.95
PC-15B	Power Cord		*		*	$10.95
MB-130	Mounting Bracket		*	*	*	$19.95

Alinco Mobile Specifications

Model	Primary Use	Frequency Range	Power	Current Drain Xmit	Current Drain Rec	Power Out	Memories	Ant Z	Mike Z	Sensitivity	Height in	Width in	Depth in	Weight lbs
DR-140T/TQ	Mobile	2 m	13.8 VDC	10.5 A	800 MA	50 W	51	50 Ω	600 Ω	<.16 µV at 12 dB	1.6	5.5	6.08	1.9
DR-150T/TQ	Mobile	2 m Trans	13.8 VDC	10 A	600 mA	50 W	100	50 Ω	600 Ω	<.16 µV at 12 dB	1.6	5.6	6.2	2
DR-430TQ	Mobile	440 MHz	13.8 VDC	9.5 A	500 mA	35 W	20*	50 Ω	600 Ω	<.16 µV at 12 dB	1.6	5.5	6.75	2.42
DR-605T/TQ	Mobile	2m/440 MHz	13.8 VDC	11.5 A	1.2 A	50 W/35 W	50	50 Ω	600 Ω	<.16 µV at 12 dB	1.6	5.6	7	
DR-610T/TQ	Mobile	2m/440 MHz	13.8 VDC	11.5 A	1.2 A	50 W/35 W	120 †	50 Ω	600 Ω	<.16 µV at 12 dB	1.6	5.6	6.5	2.45

* Expand to 100 with optional EJ-19U †Expand to 240 with optional EJ-23U

HF / VHF All-Mode

IC-706MKII
$1599.00
Suggested List Price

HRO Discount Price $1299.95

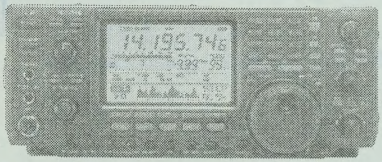
The compact IC-706MKII HF / VHF all-mode transceiver is an update of the IC-706. New features include: improved VHF band RF stage, a tone squelch function (optional UT-86 required), 2 optional filters, and the optional DSP plug in IC-UT106.

The IC-706MKII covers the HF bands from 160 through 10 meters as well as the popular six and two meter bands. It includes all modes over its entire frequency range, including FSK for RTTY operation, and narrow band FM on the HF bands. The receiver offers continuous coverage from 30 kHz to 2 meters with wide AM and FM broadcast reception.

Features include a 100 watt output transmitter (40 watts AM) from 160 through 6 meters, with 30 watts output on 2 meters (4 watts AM). VOX is included, as well as a speech processor, and optional narrow SSB filter. CW features include a built-in keyer, optional narrow receiver filter, full break-in (QSK), adjustable CW pitch and CW reverse functions. The PS-85 optional switching power supply is great for making the IC-706 a base station. The AT-180 optional automatic antenna tuner provides a 3:1 match and covers 6 meters.

101 memories store up to 9 alphanumeric characters each. A dot matrix display shows all of the popular menu features, frequency and multifunction meter data. A spectrum scope displays band activity at a glance.

- Covers the HF bands plus 6 m & 2 m.
- Detachable front panel.
- Multiple CW functions.
- I-Loop PLL circuit.
- Simple spectrum scope function.
- Compact feather weight.
- All-mode operation including RTTY.
- 101 alphanumeric memories.
- Plus more features and options.



Call for HRO's Low Discount Prices

IC-746
HF + 6 m + 2 m
$2280.00
Suggested List Price

PC Ready!

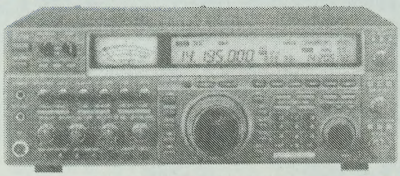
The IC-746 is a next-generation HF rig designed for the amateur who wants all the popular bands in one rig. The IC-746 has HF, 6 meters, and 2 meters together for convenient operation. It offers all mode operation (SSB, CW, RTTY, AM and FM) on all of these bands. It provides 100 watts output on all bands. The partially dot matrix LCD screen includes a spectrum display and shows the status of all major functions of the rig. It is a first in its price class to include twin Pass Band Tuning. It follows Icom's usual designs and uses most of the filters and other accessories designed for their HF radio line.

- A wide frequency coverage receiver with continuous coverage from 30 kHz to 60 MHz and 108-174 MHz.
- Large, multi-function LCD provides for ease of use in most any lighting condition. Multi-functions include band scope, memory names, key assignments, twin PBT settings, split frequency and memory keyer contents.
- Automatic antenna tuner covers HF and 6 meter bands. After operating on one band for the first time, memories can be preset providing very high speed tuning.
- Versatile filter combinations allow up to 3 optional crystal filters.
- Complete CW functions include a built-in 4 channel memory keyer with 50 characters, CW electronic keyer, CW pitch control and full-break in.
- Aluminum die-cast chassis and large cooling fan for 100% duty operation.
- DSP function is standard providing noise reduction, automatic notch filter and selectable APF.
- Digital, multi-function S/RF meter provides a variety of useful information on signal strength and RF output. SWR and ALC levels are simultaneously shown while transmitting.
- Other features include: tone squelch with 50 different tone frequencies; FM narrow capability; quick split function; triple band stacking register; memo-pad function; optional voice synthesizer; and IF transmit audio monitor.

The IC-746 is the latest in Icom HF technology and base station operation. Contact the HRO nearest to you for additional information on this great rig.

Check Our Web Page http://www.hamradio.com
Special offers, Manufacturers coupons, and Convenient ordering 24 hours a day

HF RIGS & ACCESSORIES



IC-775 / DSP

$3599.95

HRO Discount Price

PC Ready!

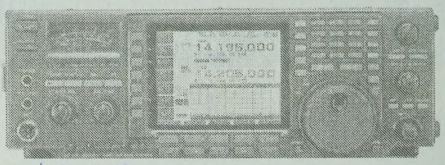
The new digital IC-775 / DSP is designed especially for the serious DX'er who requires serious equipment. This radio is fun to operate but it was engineered from the ground up using high-quality components to offer performance you will find nowhere else. Icom's new DSP technology brings you unsurpassed signal quality. Control of the signals at the modulation stage produces high quality SSB transmit signals that analog methods can not compete with. Noise reduction at the demodulation stage results in crystal clear signals. This is revolutionalry DSP technology at work for the serious DX'er.

- Digital noise reduction. The DSP provides outstanding signal-to-noise ratio for clean receive signals.
- Digital automatic AF notch.
- Digital low-pass, high-pass and ultra-narrow CW filters.
- Digital automatic audio peaking filter.
- Twin passband tuning, noise blanker, and AGC.
- MOS-FET finals.
- Direct Digital Synthesizer (DDS) for frequency stability.
- High performance general coverage receiver.
- Built-in antenna tuner.
- Built-in memory keyer and QSK function.
- Data mode for RTTY, SSTV or packet operation.

Cloning Software

Icom cloning software allows you to preprogram memory channels with operating frequencies, set tones, set power levels, set squelch levels, set up auto-dial DTMF frequencies, and exchange operating frequencies. **Call for price quotes.**

Software is available for these radios:
- CS2710 for 2710H (use with OPC-646)
- CSR10 for IC-RC10 (use with OPC-478)
- CSWHH for Windows (IC-T2A, T7A, W32A)



Call for HRO's Low Discount Prices

IC-756

$3056.00

Suggested List Price

PC Ready!

Icom presents the successor to the IC-736. The IC-756 is a middle class HF rig that offers many high performance features and quality usually seen only in high class, high performance rigs. It includes most of the features of the IC-736 with a number of improvements. Most significant are a new 4.9 inch multifunction LCD display, a newly designed DSP system, twin pass band tuning (PBT) and a dual watch function for monitoring multiple frequencies.

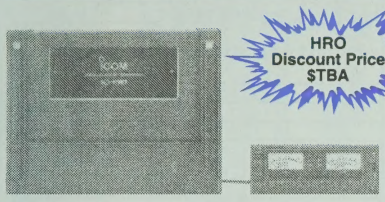
- Receive coverage from 30 kHz to 60 MHz. Transmits on amateur HF bands and 6 meters.
- All mode operation to include USB, LSB, CW, AM and FM.
- 101 memory channels, 99 regular and 2 scan edges.
- Provides 100 watts continuous output maximum on all modes except AM (40 watts maximum). Has low power adjustable to 5 watts.
- 4.9 inch multifunction LCD displays operating frequency, mode and filter selection.
- Spectrum scope function on the display with passband selection of ±25 kHZ, ±50 kHz or ±100 kHz.
- Display shows memory or memo pad list showing frequency, mode and memory name for the 10 memory channels displayed per page.
- Switch labels are shown on the display to simplify radio operation.
- Automatic antenna tuner for HF and 6m built-in.
- Selectable AGC and RF attenuator.
- Display shows the contents of the CW memory keyer allowing quick response during CW operation.
- The new DSP design improves receive and transmit audio at the IF stage. Also provides noise reduction, automatic notch filter, PSN modulation/demodulation and selectable APT for super narrow operation.
- Twin PBT narrows the IF passband in two stages to reduce interfering signals.
- The dual watch function monitors two frequencies simultaneously.
- A high performance memory keyer has 4 memory channels, contest number auto count up and auto repeat function.
- Morse code announcement of radio functions.

Icom HF Specifications

Model	Receive Freq Range	Power Supply	Current Drain Xmit	Power Output AM	FM	SSB	CW	FSK	Mike Z	Receive Circuitry	Sensitivity 1.8-30 MHz	RIT / XIT Range	Notch Atten	Audio
IC-706MKII*	30kHz-200MHz	13.8 VDC	20A	40*	100*	100*	100*	100*	600 Ω	Triple Conversion	<.16µv at 10 dB	±1.2 kHz		>2.0W
IC-746	HF, 6 m, 2 m	13.8 VDC			100#	100#	100#			Triple Conversion				
IC-756	300 kHz - 60 MHz	13.8 VDC	20A	40	100†	100†	100†		600 Ω	Triple Conversion	<.15µv at 10 dB	±1.2 kHz		>2.0 W
IC-775/DSP	100 kHz - 29.99 MHz	120 VAC	135 VA	50	200	200	200	200	600 Ω	Quadruple Conversion	<.16µv at 10 dB	±9.9 kHz	auto	>2.6 W
IC-781	100kHz - 30MHz	120VAC	760 VA	75	150	150	150	150	600 Ω	Quadruple Conversion	<.16µv at 10 dB	±9.9 kHz	45 dB	>2.6 W

† Output is continuously adjustable from 5 to 100 W * 20W SSB/CW/FM/RTTY and 4W AM for 2m. Continuously adjustable. # 50 watts on 2 meters

HF + 6m Amplifier

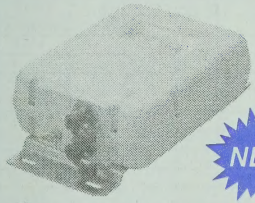


HRO Discount Price $TBA

IC-PW1

The IC-PW1 linear amplifier provides a wide frequency coverage with up to 1kW output requiring only a maximum of 100 watts input. The duty cycle is 100 percent with full break-in operation. It covers the amateur bands from 160 meters to 15 meters plus 6 meters. For convenience of operation it includes an automatic antenna tuner for all amateur HF bands including 6 meters. Internal circuitry allows the ALC to be adjusted over a wide range allowing the PW1 to be used with almost any rig - not just ICOM. Operates on 110 or 220 VAC 50 or 60 cycle.

Automatic HF Antenna Tuners



NEW!

AH-4

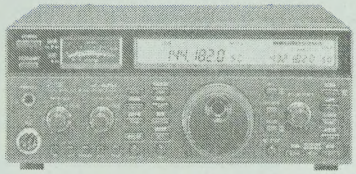
Tune up from HF through 50 MHz band. The AH-4 auto-tuner covers all amateur bands from 80 to 6 meters when used with a minimum 23' long wire antenna or the optional AH-2b antenna element. 40 through 6 meters is accommodated with an 8' antenna. It has automatic band changes and tunes usually in less than 2.5 seconds. The 45 memories store SWR minimum and tuning combinations. With those Icom radios with the TUNER feature, the AH-4 is remotely controlled from the radio front panel. Requires only 300 mW to tune and handles up to 120 watts.

HRO Price $309.95

Icom HF Tuners

Features	AT-180	AH-4
Input Power (Watts)		
Max	120	120
Min	8	10
Auto Tune Time (seconds)		
New Band	2 - 4	2 - 3
Same Band	≤3	1
Tuning Accuracy	VSWR<1.5	VSWR<2:1
Auto Band Switching	yes	yes
Preset Matching	CPU Controlled	CPU Controlled
Power Supply	13.8 VDC	13.8 VDC
Frequency Coverage	1.8-28 MHz	3.5-54 MHz
Radios	IC-706	
HRO Price	$499.95	$309.95

2m / 440 MHz Base



IC-821H – $1489.95

HRO Price

PC Ready!

This 2m / 440 MHz FM base station transceiver is the perfect rig for satellite work. Satellite communications are enhanced with satellite memory and tracking functions. It is also ready for packet operation. The IC-821H is compact and competitively priced without sacrificing features.

- 45 watts on 2 m and up to 40 watts on 440 MHz.
- All-mode operation
- 160 memories.
- DDS has 1 Hz resolution.
- Compact size enables for easy installation.
- High-stability crystal.
- Optional tone scan.
- 2 VFO's for both VHF and UHF bands.
- IF shift to reduce interference.
- RIT function.
- Noise blanker and IF shift for sub band.
- Continuous adjustment transmit power.
- Full-duplex
- Packet operationup to 9600 bps. DATA terminal directly connects to its modulator circuit. Modulator circuit prevents exceeding maximum deviation even with large amounts of data.
- Stereo headphone jack and two external speaker jacks.
- 50 memory channels can be user allocated to main and sub-bands.
- 2 antenna connectors for VHF and UHF.
- Attenuator prevents distortion.
- Built-in electronic keyer.
- Individual mode selection on each band.
- Re-writeable call channels for each band.
- Optional CW filters for main and sub bands.
- Microphone included.
- Satellite communication functions include reverse and normal tracking on main and sub-band VFOs, and Doppler compensation. 10 satellite frequency memories.
- Separate main and sub S-meters.

Icom HF Filters

Filter	Center Frequency	Bandwidth	Mode	781	775	765	756	746	738	737A	736	735	729	728	725	726	707	706	706 MKII	R71A	R72	R9000	HRO Price
FL52A	455 kHz	500 Hz	CW	std		std	*	*	*	*	*						*					*	$179.95
FL53A	455 kHz	250 Hz	CW	std	*	*		*	*	*	*						*						$179.95
FL32A	9.0106 MHz	500 Hz	CW	std		std						*								*			$99.95
FL63A	9.0106 MHz	250 Hz	CW									*											$99.95
FL96	455 kHz	2.8 kHz	SSB					*															TBA
FL100	9.0106 MHz	500 Hz	CW				*	*	*	*	*		*	*	*	*		*	*	*	*		$99.95
FL101	9.0106 MHz	250 Hz	CW	std	*	*	*	*	*	*	*		*	*	*	*		*	*		*		$99.95
FL102	9.0100 MHz	6.0 kHz	AM	std	*	*																	$75.95
FL103	9.0115 MHz	2.8 kHz	SSB	*				*										*	*	std			$109.95
FL-222	455 kHz	1.9kHz	SSB		*		*	*															$199.95
FL-223	9.0115 MHz	1.9 kHz	SSB		*		*	*										*	*				$79.95
FL-232	9.0115 MHz	350 Hz	CW		*		*	*										*	*				$89.95

ICOM

Icom Base Station Accessories

OPTIONS		HF RADIOS											VHF/UHF		RECEIVERS					
		781	775	765	756	746	738	736	728	707	706	706 MKII	820	821H	R9000	R72	R100	R7000	R8500	HRO Price
External AC Power Supply	PS-30						*		*	*	*	*	*	*						$499.95
	PS-85				*	*					*	*								$269.95
Internal AC	PS-35																			$299.95
External Speakers	SP-3	*		*			*	*	*	*			*	*	*	*	*	1	*	$109.95
	SP-7						*	*	*	*	*	*	*	*		*	*	*	*	$75.95
	SP-10										*	*								$55.95
	SP-12										*	*								$44.95
	SP-20	1	*	1			*	*	*	*			*	*	1	*	*	*	*	$239.95
	SP-21		*		*	*	*	*		*			*	*						$119.95
Automatic Antenna Tuner	AH-4					*						*								$309.95
	AT-180										*	*								$499.95
	AT-500	*	*	*			*	*	*	*										$1,199.95
HF Amplifier	IC-PW1	*	*	*	*	*	*	*	*	*	*	*								TBA
Antenna Selectors	EX-20																			$129.95
	EX-627	*	*	*			*	*	*	*	*	*								$449.95
Antennas	AH-2B			*		*		*	*											$299.95
	AH-610																			$169.95
Weather Proof Preamps	AG-25												*	*						$199.95
	AG-35												*	*						$169.95
	AG-1200																			$169.95
Microphones	HM-36	*	*	*		*	std		*											$69.95
	HM-103										*	*								$74.95
	SM-6	*		*			*	*	*	*			*	*						$99.95
	SM-8	*	*	*		*	*	*	*	*	*	*	*	*						$159.95
	SM-20	*	*	*	*	*	*	*	*	*	*	*	*	*						$239.95
Mounting Brackets	MB-5								*	*			*	*		*			*	$59.95
	MB-12																	*		$59.95
	MB-18																			$59.95
	MB-19		*																	$74.95
	MB-23				*															$15.95
	MB-49						*	*												$59.95
	MB-62											*								$25.95
	MB-63											*								$18.95
Handles	MB-19	3		*											3					$74.95
	MB-23								*	*			*	*		*			*	$15.95
Remote Controllers	RC-11																			$109.95
	RC-12																	*		$119.95
TV Adapters	TV-R7000																	*		$299.95
	TV-R7100																		*	$299.95
	TV-970																			$499.95
	TV-1275																			$329.95
CI-V System	CT-16	*	*	*		*	*	*	*	*	*	*			*					$119.95
	CT-17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	$129.95
	UX-14																			$99.95
High Stability Crystal Units	CR-64								*							*				$119.95
	CR-282		*	*		*	*	*												$149.95
	CR-293												*	*						$339.95
	CR-338									*										$81.95
	CR-502				*						*	*								$76.95
Keyer Unit	EX-243																			$99.95
FM Unit	UI-8															*				$109.95
	UI-9									*										$99.95
AM-FM Unit	UI-7								*											$95.95
Tone Encode	UT-30			*			*	*	*	*										$49.95
Tone Squelch	UT-34																			$79.95
	UT-50												*	*						$59.95
	UT-86											*								$69.95
Voice Synthesizer	EX-310																	*		$85.95
	UT-36	*		*									*	*	*	*			*	$74.95
	UT-66		*																	$69.95
	UT-102				*	*						*								$69.95

1: Style and size are matched with the equipment. 2: An optional OPC-118 CABLE is required. 3: Included. 4: An optional UX-14 is required.
5: Option unnecessary. 6: An optional OPC-137 CABLE is required. 7: for HF band only.

PC-Controlled Receiver

PC Controlled All-Mode Receiver

$629.00
Suggested List Price

HRO Discount Price $529.95

IC-PCR-1000

Listen to the world right from your PC: broadcast radio and television, ham stations, marine and aviation and more. Control this receiver on any personal computer via three interface screens.

Wide band coverage from .5-1300 MHz (cell phone blocked). All modes: AM, FM, WFM, USB, LSB, CW. You have unlimited memory channels, IF shift, noise blanker, six scan types, programmable tuning steps, RF attenuator, and on-line help. You may add 9600 baud data receive with a third party TNC. Also features a real-time bandscope function.

Package includes AC adapter, telescoping antenna with BNC connector, RS-232C cable, software for Windows 3.2 or Windows 95, and an external speaker plug. Optional accessories include DC power cable, wide band base station antenna, and your choice of several external speakers.

Family Radio Service HT

HRO Discount Price $149.95

NEW!

IC-4008A

$160.00
Suggested List Price

The IC-4008 is easy to operate, has water-resistant construction and features a 'Call Ring' function to send a ring tone to another radio. Up to 10 ring patterns may be selected. Also has an automatic transponder function to automatically check on another stations availability. Uses 3 AA alkaline cells.

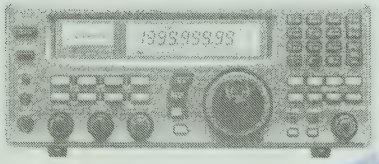
HRO Discount Price $539.95

IC-R10

$641.00
Suggested List Price

Tune in the world where ever you go with the IC-R10 handheld. It has a wide frequency range from 0.5 MHz to 1300 MHz. (Depending on the country, some frequency ranges may be restricted. Cellular band blocked in USA.) It includes FM, WFM, AM, USB, LSB and CW modes.

- All mode receive including CW and SSB.
- 1000 memories. Store eight-character memory names in each channel.
- Multi function LCD.
- Tunable bandpass filters for good image & intermod rejection.
- Real-time bandscope makes it easy to find busy frequencies.
- The "busy catch scan" searches for the next busy frequency (FM only) while the receiver is detecting a signal.
- Voice Scan Control pauses only for modulated signals.
- Full computer access is available from your home PC with the optional CS-R10.

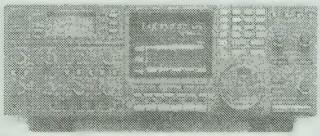


IC-R8500 – $2099.95

HRO Price

Serious listeners will appreciate this super wide band receiver that offers the high performance of the IC-R9000 at a much lower price. Receive from 0.1 to 2000 MHz in all modes (cellular band blocked). You can be sure that if there are any communications or broadcasts out there, you'll be able to hear then with a minimum of interference with other signals.

- All modes (USB, LSB, CW, AM, FM WFM) plus CW narrow (optional FL-52A required), AM narrow and FM narrow.
- View TV signals with optional TV-R7100. Connection to CRT monitor required (not included).
- Built-in AF shift & APF.
- High receive sensitivity and built-in TCXO) for high stability included.
- Noise blanker, RF attenuator and selectable AGC functions.
- 1000 memory channels store frequency, mode and tuning step. Channels in 20 banks of 40 channels plus auto memory write of 100 channels and skip area of 100 channels. Alphanumeric names (8 characters) may be assigned.
- RS-232 interface, versatile scanning functions, various tuning steps, 3 antenna connectors, S-meter squelch, voice synthesizer (optional UT-102 required) sleep timer, REC and REC remote terminals for tape recorder control.



IC-R9000 – $7508.00

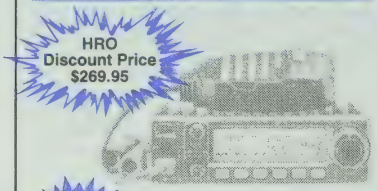
Suggested List Price—Call for Quotes

Notice: Federal and State Government Agencies and Communications Customers Only

This receiver has Icom's unique multifunctional CRT with spectrum scope to display information on the status of the radio as well as incoming signals. The CRT shows memory contents, dual clocks, weekly and daily timers, and frequency information of the dual VFO's. The display doubles as a spectrum scope showing a maximum of ±100 kHz. Dynamic range is 60 dB and sensitivity is approximately .63µV.

The IC-R9000 receives 100 kHz to 1999.8 MHz in LSB, USB, CW, AM, FM, WFM (wide-FM), FSK. Eleven separate bandpass filters use GaAs Fets for VHF and UHF. 1000 memories stores mode, frequency, and tuning increments. Multiple scanning functions: program, memory, selected memory, selected memory mode, priority, and voice. Direct keyboard entry; notch filter and IF shift.

2m Mobile



NEW!

IC-2100H

$324.00

Suggested List Price

The IC-2100H has a selectable green or amber display for easy viewing in any light. With improved IMD the receiver provides protection from excessively strong signals. A squelch attenuator reduces interference from strong nearby signals. Selectable power from 55 W down to 5 or 10 W. Features commercial grade construction. Tone squelch standard with pocket beep and tone scan functions. 113 memory channels. PC ready and 14 channels for 16 digit DTMF codes.

2m / 70cm Mobile

IC-207H – $480.00

Suggested List Price

This 2m/440MHz dual bander will easily fit in your car. Not only is it a great mobile rig but it comes 9600 BPS packet ready. The wideband receiver covers 118-174 MHz including airband and 440-540 MHz.Output is 50W VHF and 35W UHF. Other features include CTCSS encoder/decoder standard, built-in duplexer, 162 memory channels, HM-98 mike and detachable front panel.

2m / 70cm Mobile

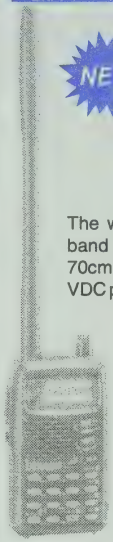
IC-2710H – $605.00

Suggested List Price

Beginners and enthusiasts alike will enjoy the easy operation of this dual-band mobile.

- Multi-function backlit remote-control microphone has two user-programmable buttons and a removable cover to protect the keypad.
- Separate front panel can be placed in a convenient location. Two optional separation cables are available. (OPC-600, 11.5 feet and OPC-601, 23 feet).
- High power: 50 watts VHF, 35 watts UHF output; three RF output power settings.
- High speed programmable scan (3 pairs of scan edge and memory scan).
- 200 regular memory channels store frequency, offset, tone, duplex shift direction. Includes 6 scratch pad memories for instant recall; 2 call memories; and 12 band-edge memories. Optional cloning (PC programmable) is available.
- True dual band design with built-in duplexer, independent volume, squelch, function switches. V/V, U/U simultaneous receive.
- Built-ins: 50-frequency subaudible tone encoder. Intermod protection. 8 DTMF 16 digit memory channels. 50 CTCSS frequencies.
- Options: Pager (UT-49), code squelch and external DTMF control via sub-band. Pocket beep, tone squelch and tone scan.

Tri-Band Handheld



NEW!

IC-T8A-HP– $419.00

6m /2m / 70 cm

Suggested List Price

The world's smallest full-featured tri-band transceiver covers 6m, 2m and 70cm. It hasl 5 watt output with 13.5 VDC power supply. The rugged, water-resistant construction meets MIL-STD-810 requirements.

- PC programmable with optional cloning software and cable.
- DTMF encoder with 9 DTMF memories.
- Narrow / wide FM capability and AM receive.
- Tone squelch and pocket beep standard.

Icom VHF Specifications

Model	Freq Range	Mode	Power Supply	Current Drain Xmit	Curernt Drain Rec	Power Out	Ant Z	Mike Z	Sens	Audio Pwr	Built-in AC Supply
IC-207H	2m/440 MHz†	FM	13.8 VDC	12 A	1.0 A	50/35 W	50 Ω	600 Ω	<.18 µV	2 W	no
IC-821H	2m/440 MHz	All	13.8 VDC	11 A	2.0 A	45/35 W	50 Ω	600 Ω	<.11 µV	2 W	no
IC-2710H	2m/440 MHz	FM	13.8 VDC	11.5A	1.8 A	50/35 W	50 Ω	600 Ω	<.18 µV	2.0 W	no
IC-2100H	2m	FM	13.8 VDC	12A	1.0 A	55 W	50 Ω	600 Ω	<.18 µV	2.4 W	no

† Extended receiver coverage 118-174 MHz (airband included), 440-450 MHz

Handheld Batteries/ Chargers

Model	Volts	Rating mAh	Wall Charger	Desk Charger	HRO Battery Prices
BP3	8.4	270	BC-25u	BC-35	$65.95
BP-7	13.2	450	BC-16u	BC-35	$99.95
BP-8	8.4	800	BC-16u	BC-35	$99.95
BP-70	13.2	270	BC-16u	BC-35	$99.95
BP-81	7.2	110	BC-110A	BC-72	$76.95
BP-82	7.2	300	BC-110A	BC-72	$83.95
BP-83	7.2	600	BC-110A	BC-72	$90.95
BP-84	7.2	1000	BC-110A	BC-72	$99.95
BP-85	12	340	BC-110A	BC-72	$119.95
BP-101	7.2	700		BC-119*	$94.95
BP-102	7.2	1200		BC-119*	$119.95
BP-103	12	600		BC-119*	$129.95
BP-111	7.2	400	BC-110A	BC-80	$68.95
BP-112	7.2	700	BC-110A	BC-80	$79.95
BP-113	7.2	1200	BC-110A	BC-80	$83.95
BP-114	12	400	BC-110A	BC-80	$139.95
BP-121	7.2	400	BC-77A	BC-119*	$99.95
BP-122	7.2	700	BC-77A	BC-119*	$89.95
BP-123	7.2	1200	BC-77A	BC-119*	$89.95
BP-124	12	400	BC-77A	BC-119*	$129.95
BP-131	7.2	900		BC-119*	$119.95
BP-132	12	600		BC-119*	$139.95
BP-132A	12	600	BC-77A	BC-119*	$139.95
BP-157	7.2	900	BC-77A	BC-119*	$59.95
BP-160	7.2	700	BC-77A	BC-119*	$66.95
BP-171	4.8	700	BC-74A	BC-119*	$29.95
BP-172	4.8	650	BC-74A	BC-119*	$69.95
BP-173	9.6	600	BC-74A	BC-119*	$99.95
BP-180	7.2	600		BC-119*	$83.95
BP-194	**				$18.95
BP-195	9.6	700	BC-110A	BC-119*	$42.95
BP-196	9.6	1050	BC-110A	BC-119*	$53.95
BP-197	**				$24.95
BP-198	4.8	700	BC-110A	BC-119*	$59.95
BP-199	6	700	BC-110A	BC-119*	$70.95
BP-200	9.6	680	BC-110A	BC-119*	$85.95

*Adapters are required. See Adapter Table.
** "AA" Alkaline Pack

2-Meter Handhelds

World's only 7-Watt HT HRO Price $249.95

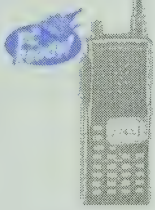
IC-2GXAT-HP

Beginners and seasoned veterans will like the surprisingly simple operation of this high powered 2-meter handheld.

- Output 7 W with BP-132A battery or 13.5 VDC.
- Forty repeater oriented memories; 1 call channel.
- Programmed or memory scan with skip function.
- Tone scan function.
- Squelch monitor.
- Automatic power saver.
- Lighted display with timer.
- DTMF redial and five auto dial memories.
- Automatic repeater function.
- Channel number indication.
- Subaudible tone encoder, tone squelch and pocket beep. Optional pager and code squelch (UT-49 required)

HRO Discount Price $169.95

IC-T2A



This simple-to-operate 2m handheld has cloning capability, customizable keys and a guide function, all housed in a solid body. Tone squelch and DTMF are standard.

- Transmits 140-150 MHz and receives 136-174 MHz.
- 4.5 watts output standard.
- LCD backlight.
- Encode/decode tone squelch operation standard. Includes pocket beep & tone scan.
- Customize 8 front panel keys. Assign functions by cloning or manual keypad operation.
- 40 memory channels.
- 5 DTMF memory channels each capable of storing DTMF codes up to 32 digits.

HRO Discount Price $239.95

IC-T22

Now with BP-180 Battery

Icom's convenient 2m handhelds give you high quality at a low price.

- Slim, easy-to-use.
- Excellent receive audio.
- Wide-band reception.
- 40 memories.
- "Log-in" feature memorizes transmitted frequencies.
- Runs directly from 12V for 5 W output.
- Battery pack compatible with the IC-Z1A & IC-W31A.

2m / 70 cm Dual -Band

HRO Discount Price $TBA

IC-Q7A

$TBA Suggested List

NEW!

This mini-power twin-band HT has a wideband receiver (30 MHz to 1.3 GHz) cellular frequencies excluded. Receives FM, AM and WFM modes for the air band, TV and FM broadcast stations. Output on transmit is 300 mW for VHF and 350 mW for UHF. Two hundred memory channels. Tone squelch standard. RIT capability. LCD backlighting with timer. Uses 2 standard AA or NiCd batteries (not included).

The IC-Q7A has not been approved by the Federal Communications Commission. This device is not, and may not be offered for sale or lease or sold or leased until the approval of the FCC has been obtained.

HRO Discount Price $304.95

IC-W32A

$365.00 Suggested List

This upgrade to the IC-W31A has the same features plus many new ones:

- 5 watts out with BP-173.
- 200 programmable memories .
- Analog volume controls and adjustable squelch.
- PC programmable.
- Wire cloning from another W32A.
- Advances W/UU/VU performance.
- Allows transmitting on VHF and simultaneously receiving on UHF. Same for UHF Tx and VHF Rx.
- More CTCSS frequencies: set Rx and Tx tone separately from 50 built-in frequencies.
- Weather channels.
- Backlit keypad.
- 8 character alphanumeric display.
- Extended Rx for VHF and UHF.

HRO Discount Price $279.95

IC-T7A-HP

$330.95 Suggested List

The IC-T7A fits comfortably in the palm of your hand. Carry it in your pocket or a small bag.

- Single VHF / UHF power module.
- One touch operation .
- 3W out standard.
- Encode/decode included.
- PC programmable.
- Easy scanning display.
- High speed scan and scan timer.
- Auto band selection, memory allocation
- 70 memories, 9 DTMF autodialing memories.
- Wide band receive.
- Microphone remote control.
- Indicator shows approximate battery voltage remaining.
- Compatible with T22A, W31A and Z1A accessories.

BC-119 Adapters

Adapter	For Batteries	HRO Price
AD-22	BP-101, BP-102, BP-103	$46.95
AD-25	BP-131A, BP-132A, BP-157A	$63.95
AD-26	BP-121, BP-122, BP-123, BP-124	$18.95
AD-27	BP-100, BP-130	$14.95
AD-28	BP-131, BP-132	$18.95
AD-51	BP-171, BP-172, BP-173	$14.95
AD-56	BP-171, BP-172, BP-173, BP-180	$18.95
AD-81	BP-195, BP-196	$17.95
AD-87	BP-198, BP-199, BP-200	$8.95

Icom Handhelds

Model	Frequency	Power Supply	Power Out Transmit*	Current Transmit	Drain Receive	Sensitivity	Height in(cm)	Width in(cm)	Depth in(cm)	Weight oz(g)	HRO Price
IC-2GXAT-HP	144-148 MHz†	13.5VDC	7.0/3.0 W	1.8 A	250 mA	<.18µV/12 dB	4.9(12.2)	2.2(5.7)	1.1(2.9)	13(365)	$249.95
IC-Q7A	2m/440††	3.0 VDC	350/300 mW	440 mA	170mA	<.16µV/12 dB	3.4(8.6)	2.3(5.8)	1.1(2.7)	6 (170)	TBA
IC-T2A	140-150MHz†	9.6VDC	4.5/1.0W	1.8 A	25mA	<.18µV/12 dB	5.5((14)	2.4(5.8)	1.4(3.2)	14.8(420)	$169.95
IC-T7A-HP	2m/440	7.2 VDC	5.0/1.0 W	1.2 A	600 mA	<.16µV/12 dB	4.9(12.5)	2.2(5.7)	1.4(3.5)	11(320)	$279.95
IC-T8A/T8AHP	6m/2m/441	4.5-16VDC	2.0/5W	1.4 A	200	<.18µV/12 dB	4.3(10.7)	2.3(5.8)	1.1(2.7)	9.9(280)	$369.95
IC-T22	2m	13.5 VDC	5.0/.5 W	1.4 A	150 mA	<.18µV/12 dB	4.8(12.2)	2.3(5.8)	1.1(2.7)	10.9(310)	$239.95
IC-W32A	2m/440 #	13.5VDC	5.0/.5 W	1.6 A	210 mA	<.18µV/12 dB	5.4 (13.7)	2.2(5.7)	1.3(33)	16 (450)	$329.95

* Power with standard battery pack † Frequency coverage 138-174(receive only outside amateur bands), 440-450 MHz # Extended receive 118-174 MHz and 400-470MHz

HANDHELD ACCESSORIES

OPTIONS		2 METERS											DUAL and TRI BAND										440 MHZ						1200 MHZ	220 MHZ			
		2SAT	2GAT	2GXAT	2SRA	T21AT	T2A	T22	2IA	02AT	P2AT	2AT	24AT	D1A	V21AT	W2A	W21AT	W31A W32A T7A	T8A	X21AT	X2A	Z1A	4SAT	4GAT	4SRA	4IA	04AT	P4AT	12GAT	3SAT	03AT	P3AT	HRO Price
BATTERY PACKS	BP-3		*							*		std												*			std		*		std		$65.95
	BP-7		*							std														*			*		*		*		$99.95
	BP-8		*							*		*												*			*		*		*		$99.95
	BP-70		std							*														std			*		std		*		$99.95
	BP-81	*			*								*			*					*		*		*					*			$76.95
	BP-82	*			*								std			*					*		*		*					*			$83.95
	BP-83	*			*								*			*					*		*		*					*			$90.95
	BP-84	*			std								*			std					std		*		std					*			$99.95
	BP-85	*			*								*			1					*		*		*					*			$119.95
	BP-101													*																			$94.95
	BP-102													*																			$119.95
	BP-103													*																			$129.95
	BP-111										std																	std				std	$68.95
	BP-112										*																	*				*	$79.95
	BP-113										*																	*				*	$83.95
	BP-114										*																	*				*	$139.95
	BP-121								std																	std							$99.95
	BP-122								*																	*							$89.95
	BP-123								*																	*							$89.95
	BP-124								*																	*							$129.95
	BP-131																			*													$119.95
	BP-131A														*																		$99.95
	BP-132																			*													$139.95
	BP-132A			*											*																		$139.95
	BP-157																			*													$59.95
	BP-157A														*																		$85.95
	BP-160			*																													$66.95
	BP-171							*										*				*											$29.95
	BP-172						*	*										*				*											$69.95
	BP-173						*	*										*				*											$99.95
	BP-180						*	*										*				*											$83.95
	BP-195																																$42.95
	BP-196																																$53.95
	BP-198																		*														$59.95
	BP-199																		*														$70.95
	BP-200																		*														$85.95
BATTERY CASES	BP-4		*							*		*												*			*		*		*		$35.95
	BP-90	*			*								*			*					*		*		*					*			$35.95
	BP-100													*			*																$24.95
	BP-110										*																	*				*	$35.95
	BP-120								*																	*							$35.95
	BP-130													*						*													$24.95
	BP-130A			*											*																		$35.95
	BP-159					*																											$35.95
	BP-170							*										*				*											$35.95
	BP-194						*																										$18.95
	BP-197																		*														$24.95
	CM-12		*							*														*			*		*		*		$49.95
CABLES	CP-1		1							1		2												1			1		1		1		$26.95
	CP-11		3							*		2												3			*		3		*		$40.95
	CP-12	*					*				*		*					*				*	*					*		*		*	$36.95
	CP-12L																		*														$36.95
	CP-13			*	*									*	*	*	*			*					*								$36.95
	CP-13L				*				*							*					*				*	*							$40.95
	OPC-254	*					*				*		*					*				*	*					*		*		*	$14.95
	OPC-288			*	*				*						*	*				*	*				*	*							$19.95
DC -CONV	DC-1											*																					$40.95
SPEAKER MIKES	HM-46			*			*			*	*	*	*		*		*	*	*	*		*	*				*	*		*	*	*	$59.95
	HM-46L		*						*															*		*			*				$59.95
	HM-54	*		*			*			*	*	*	*		*		*	*	*	*		*	*				*	*		*	*	*	$79.95
	HM-55			*											*					*													$143.95
	HM-65				*									*		*	*				*				*								$61.95
	HM-70				*									*		*	*				*				*								$66.95
	HM-75						*								*		*	*	*	*		*											$79.95
HEADSET	HS-60				*									*		*					*				*								$94.95
	HS-51	*	*	*			*		*	*	*		4		*		*		*	*			*	*		*	*	*	*	*	*	*	$79.95
	HS-85																	*				*											$84.95
MOUNTING BRACKETS	MB-24		*																					*					*				$41.95
	MB-25		*																					*					*				$41.95
	MB-30	*		*	*						*		*	*	*	*	*	*		*	*	*	*		*			*		*		*	$41.95
INTERNAL OPTIONS	UT-40		*																					*									$79.95
	UT-49	*		*																			*							*			$59.95
	UT-50	std											*										*							*			$59.95
	UT-63														*		*			*													$99.95
	UT-70													std																			$179.95
	UT-71													*																			$109.95
	UT-72								std																	std							$109.95
	UT-86			*																													$59.95
	UT-93																					*											$59.99
	UT-94																	*															$44.95
OTHER OPTIONS	AD-12		*																					*					*				$43.95
	AD-20				*											*					*				*								$83.95
	BA-10									*																	*				*		$11.95
	BA-11	*			*								*			*					*		*		*					*			$9.95
	BA-12	*																					*							*			$29.95

1 For charging BP-3, BP-5A, BP-7, BP-8, BP-70 2 Optional DC-1 is required 3 Optional AD-12 is required 4 Except for full duplex operation

KENWOOD

HF TRANSCEIVERS

TS-950SDX – $5299.00
Suggested List Price

HRO Discount Price $3899.95

This is Kenwood's top-of-the line HF transceiver. The design includes Digital Signal Processing (DSP), high power MOSFET-type finals, simultaneous dual-receive and much more.

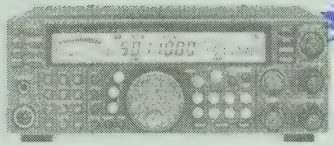
- 100 kHz – 30 MHz general coverage, quadruple conversion receiver
- 100 memories.
- 160–10 meter ham bands.
- High power with MRF150MP finals.
- Built-ins: automatic antenna tuner, dual digital VFO's, illuminated keyboard, memory channel / VFO control, and RIT / XIT.
- Fine tune in 1 Hz steps.
- Multiple scan functions.
- Built-in AF digital filter, multi-drive bandpass filter.
- Built-in dual noise blankers, IF filters, selectable IF filter in memory, 4-position RF attenuator, and auto-AGC.
- Full and semi break-in electronic memory keyer, variable pitch control.
- Menu-driven control of various functions.
- RM-1 remote keyboard.
- Front panel control of DSP.
- Optional DRU-2 voice memory device available for SSB contest use.
- 500Hz CW filter in sub-receiver.

Call for HRO's Low Discount Price

It's Revoluntionary
TS-870S – $3199.00
Suggested List Price

DSP at the IF stage is now a reality. Kenwood's TS-870S uses state-of-the-art DSP chips to enhance receiving to bring signals out of the noise. Complete computer operation and control of the TS-870S is possible with MS windows software included and a built-in RS-232C port.

- 100 kHz-30 MHz general coverage receiver with Dual VFO.
- 100 watts output, 25 on AM.
- Multiple scanning functions.
- Multi-function digital filtering.
- Dual-mode noise reduction. Variable AGC. Beat canceler and automatic notch filter.
- Selectable voice equalizer. Speech processor. Voice synsthesizer option (VS-2).
- Selectable transmit equalizer.
- Full function CMOS Super Keyer II.
- VOX and QSK.
- Built-in automatic antenna tuner.
- Two selectable antenna terminals with SO-239 connectors. External receiver antenna output jack.
- RCP software included. Free RCP-2 downloaded from Kenwood ftp site.
- Easy-to-use menu system for quick setting of functions.
- Built-in tone encoder.
- High-quality 60-second digital recording unit option (DRU-3A).



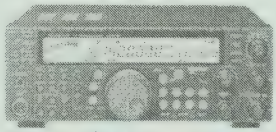
NEW!

HRO Discount Prices
570S $1749.95
570S(G) $1799.95

TS-570S – $2069.95 **TS-570S(G) – $2069.95**
Suggested List Prices

The TS-570S HF transceiver has all the features of the TS-570D and will offer incredible performance on 6 meters. Operation on 6M includes the spectacular DSP system built-in, 100 watts output and Preset Auto Antenna Tuner.

- 500 kHz to 60 MHz general coverage receiver.
- Transmit on the amateur bands from 160 to 10 meters plus 6 meters.
- Variable transmit output from 5 to 100 watts in 5 watt increments.
- 16-bit DSP technology delivers superb audio quality on both transmit and receive.
- Enhancement includes Noise Reduction for CW and SSB, audio equalization (voice/transmit equalizer and speech processor), slope tuning and automatic IF filter bandwidth selections.
- Voice/transmit equalizer.
- New "soft touch" keys.
- Two antenna ports.
- Automatic antenna tuner for all amateur bands. Has 18 sub-bands and memory for both antenna ports.
- Electronic keyer with 0 to 100 WPM and dual key inputs (one for paddle and the other for a straight key).
- Full break-in and semi-break-in CW operation.
- 10-key direct frequency entry.
- Alphanumeric sub-display provides menu, mode guidance, split frequency readout, and digital filter selection.
- Features CW auto tune enabling automatic zero-beating for CW operation.
- Quick Memory has 5 channels for on-the-fly frequency control.
- Dedicated packet port.
- Full scanning capabilities with variable scan speed. Scan across channels, groups of 10 channels, all except locked out channels, or a frequency range between two channels.
- CW reverse mode and CW message memories.
- RS-232 com port.
- 100 memory channels.
- Optional voice synthesizer (VS-3).
- Optional YK-88C-1 (500 Hz) and YK-88CN-1 (270 Hz) CW filters. Optional YK-88SN-1 (1.8 kHz) SSB filter.



HRO Discount Prices
570D $1399.95
570D(G) $1569.95

TS-570D – $1749.00
TS-570D(G) – $$1749.00
Suggested List Prices

The TS-570 represents the new standard in performance for middle class HF rigs. Perfect for base or mobile operation. Major features include16-bit DSP AF signal processing, large LCD display, preset auto antenna tuner, 100 memory channels, 10 key direct entry, full and semi breakin CW operation, dedicated packet port, high speed 57600 bps PC control, CW auto tune, built-in electronic keyer, CW message memory,menu system, CW reverse mode.

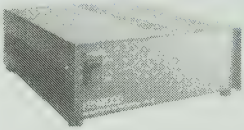
New Features on "G" Models

- TX sound quality monitor with 9 step monitor volume.
- NR1(SSB) is operator controlled in 9-step increments or automatically tracks input signal.
- CW DSP filters (80 Hz, 150 Hz and 500 Hz) providing a total of 11 filters.
- NR1 and NR2 settings reconfigured automatically when changing mode groups.
- Manual weight feature with built-in electronic keyer.
- Equalize receiving signals.
- "One-touch" DSP filter wide mode.
- Dual selectable Beat Cancel.
- CW auto tune mode links with RIT without changing the transmit frequency.

KENWOOD

HF ACCESSORIES

Power Supplies



PS-40

The PS-40 switching power supply is is rated at 23 amps and similar in size to the TS-50. The supply is for 110-230 VAC. Weighs only 4.5 pounds.
Suggested List Price $229.95
HRO Price $199.95

PS-52

The PS-52 heavy duty power supply is for the TS-850 operating all modes for the rated periods of time. The supply provides 13.8 VDC at 22.5 A. The PS-52 has a cooling fan and protection circuits.
Suggested List Price $309.00
HRO Price 279.95

PS-53

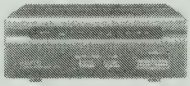
The PS-53 heavy duty power supply is for the TS-450S/TS-690S operating all modes for the rated periods of time. The supply provides 13.8 VDC at 20.5 A. The PS-53 features a cooling fan and protection circuits.
Suggested List Price $289.95
HRO Price $229.95

Call HRO's Helpful Hams With Your Questions About Kenwood

Antenna Tuner

AT-50

A fully automatic antenna tuner to use with the TS-50 and other 100 watt HF transceivers. Mobile or fixed operation. Can be installed remotely. **HRO Price $339.95**



Speakers

SP-950

The **SP-950** base station speaker has cabinet styling to match the TS-950S and TS-950SDX. **HRO Price $139.95**

SP-31

To match the TS-850, TS-870S and TS-570S styling, order the **SP-31**. **HRO Price $99.95**

SP-23

To match the TS-450S / 690S, TS-870S and TS-570S styling, order the **SP-23**. **HRO Price $76.95**

SP-41 & SP-50B

For mobile speaker applications, Kenwood provides the **SP-41 ($49.95)** and the **SP-50B ($55.95)**. The SP-41 is a small square speaker and the SP-50B is a thin rectangular speaker.

HF Accessories

Option	Model	950 SDX	940S	930S	850S	870S	570D 570S	450S 690S	440S	430S	140S 680S	50S	60S	HRO Discount Price
Microphone Hand	MC-43S	std	std	std	std		*	std	std	std	std	*	*	$59.95
Hand	MC-47						*					std	std	$59.95
Desk	MC-60A	*	*	*	*		*	*	*	*	*	*	*	$139.95
Desk	MC-80	*	*	*	*		*	*	*	*	*	*	*	$109.95
Desk	MC-90	*					*							$249.95
Filters 250Hz CW	YG-455CN-1	*	*	*	*			*						$159.95
500Hz CW	YG-455C-1	std	*	*	*			*			*			$149.95
500Hz CW	YK-455C-1							*			*			$99.95
6kHz AM	YK-88A-1		*	*										$99.95
500Hz CW	YK-88C								*	*				$129.95
500Hz CW	YK-88C-1	std	*	*	*		*	*						$129.95
270Hz CW	YK-88CN								*	*				$129.95
270Hz CW	YK-88CN-1	*			*		*	*						$129.95
1.8kHz SSB	YK-88SN		*						*	*				$119.95
2.4kHz SSB	YK-88S-1							*						$129.95
1.8kHz SSB	YK-88SN-1	*			*		*	*						$129.95
2.4kHz SSB	YK-88S								*					$129.95
500Hz CW	YK-107C											*	*	$129.95
High Stability Oscillator	SO-2	std			*		*	*				*	*	$169.95
Headphones	HS-5	*	*	*	*	*	*	*	*	*	*			$79.95
	HS-6	*	*	*	*	*	*	*	*	*	*			$59.95
External Speaker	SP-41						*		*	*	*			$49.95
	SP-31				*									$99.95
	SP-50B						*		*	*	*	*	*	$55.95
	SP-23						*	*						$76.95
	SP-950	*												$139.95
Phone Patch	PC-1A	*	*	*	*		*	*	*	*	*			$129.95
Voice Synthesizer	VS-2	*			*			*						$69.95
	VS-3						*							$39.95
Antenna Tuner	AT-50											*		$339.95
	AT-850				*									$249.95
Mobile Mount	MB-13											*	*	$55.95
	MB-430						*	*	*	*	*			$49.95
Power Supply	PS-40											*	*	$199.95
	PS-52				*									$279.95
	PS-53						*	*				*	*	$229.95
Voice Memory	DRU-2	*			*									$134.95
	DRU-3					*								$125.95
	DRU-3A						*							$129.95

Kenwood HF Specifications

Model	Receiver Frequency Range	Power Supply 50/60 Hz AC	Power Supply DC	Current Drain Xmit	Current Drain Rec	Power AM	Power FM	Power SSB	Power CW	Power FSK	FSK Shift	Mike Z	Receive Circuitry	Sensitivity	RIT / XIT	Notch Filter	Audio
TS-950SDX	100 kHz - 30 MHz	120/220/240 V		700 W max	80 W	40	150	150	150	150	170 Hz	500 Ω-50 kΩ	Quadruple Conversion	<.2µV SSB,CW,FSK	±9.99 kHz	> 40 dB	1.5 W
TS-870S	101 kHz - 30 MHz		13.8 V	20.5 A	2.0 A	25	100	100	100	100	(1)	501 Ω-50 kΩ	Quadruple Conversion	<.1µV SSB,CW,FSK	±9.99 kHz	> 45 dB	1.5 W
TS-570D	500 kHz - 30 MHz		13.8 V	20.5 A	2.0 A	25	100	100	100	100	(1)	501 Ω-50 kΩ	Double Conversion	<.4µV SSB,CW,FSK	±9.99 kHz	–	1.5 W
TS-570S	500 kHz-30 MHz, 6M		13.8 V	20.5 A	2.0 A	25	100	100	100	100	(1)	501 Ω-50 kΩ	Double Conversion	<.4µV SSB,CW,FSK	±9.99 kHz	–	1.5 W
TS-50S	500 kHz - 30 MHz		13.8 V	20.5 A	1.5 A	25	100	100	100	N/A	170 Hz	600 Ω	@	< .25 µV	>±1.1 kHz	–	2 W
TS-60S	50 - 54 MHz		13.8 V	20.5 A	2.0 A	25	90	90	90	N/A	170 Hz	600 Ω	@	< .25 µV	>±1.1 kHz	–	2 W

* Input Power ** 6m <.16µV at 10 dB †20W Out at 6m # 50 W Out at 6m @ Double Conversion SSB, CW, AM; Triple FM (1) 170, 200, 425, 850 Hz

Family Radio Service

NEW!

Special Package Deal 2 for Only $249.95

Freetalk

UBZ-LF14

$149.95 Each

HRO Price

Use the 14 FCC FRS channels to keep in touch with your friends. This HT can be used straight out of the box with no license requirements. It features 38 talk groups (CTCSS) to help you eliminate other conversations. Select the talk group among your friends and you will hear transmissions only from your own talk group. With the scramble mode you can enjoy private conversations. It can ring other radios just like a phone. The HT has a back-lit LCD display, key lock to prevent accidental changing of channels, extended operation and battery save, auto power off, time-out timer and beep tone control.

Visual Communicator

NEW!

Portable SSTV VC-H1

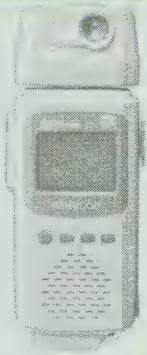
$584.00

Suggested List Price

$519.95

HRO Price

The VC-H1 combines an image scan converter, CCD camera, and LCD monitor in a compact battery operated unit. Hook it up to your transceiver and start sending and receiving color images. It runs on AA batteries making it perfect for portable operations like Field Day or special events. With the 1.8-inch color TFT screen, you can view incoming images or view your own prior to transmission. Has built-in mike and speaker. Stores up to 10 pictures. The VC-H1 can be controlled from a PC. PC connection with optional kit (Windows 95 required) to save pictures in JPEG format.



Kenwood VHF / UHF Specifications

Model	DC Power Supply	Current Drain Transmit	Current Drain Receive	Output Power	Sensitivity	RIT/XIT Range	HRO Price
TM-261A	13.8 V	11 A	0.6 A	50 W	<.16 µV		$269.95
TM-642AD**	13.8 V		1.2 A	50V/25††	<.16 µV		$739.95
TM-742AD	13.8 V	11.5 A	1.2 A	50V/35U	<.16 µV		$689.95
UT-50S**		11.5 A	1.2 A	50 W	<.16 µV		$339.95
UT-220S**		7 A	1.2 A	25 W	<.16 µV		$339.95
UT-1200**		6.5 A	1.2 A	10 W	<.16 µV		$399.95
TM-461A	13.8 V	10 A	0.9 A	35 W	<.16 µV		$449.95
TM-G707A	13.8 V						TBA
TM-V7A	13.8 V	11 A	0.6 A	50V/35U	<.16 µV		$509.95
TS-790A	13.8 V	15 A	2.5 A	*	<.22 µV †	±9.9 kHz #	$1,799.95

† SSB/CW < .16 †† 220 MHz # SSB/CW ± 1.9

* VHF FM/CW 45W; UHF FM/CW 40W; 1200 MHz FM/CW/SSB 10W; VHF SSB 35W; UHF SSB 30W

**These modules used by TM-641, TM-942, TM-741A also.

Kenwood VHF Accessories

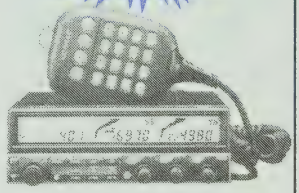
Option	Model	211A 411A	221A 321A 421A 521A	231A 331A 431A 531A	241A 441A 541A	251A 451A 551A	255A 455A	261A 461A	711A 811A	751A 851A	2530A 2550A 2570A	4100A	621A 721A	631A 731A	732A	733A	642A 742A	641A 741A	941A	V7A	HRO Price
Microphone Hand	MC-43S	*	*	*					*	*	*	*	*	*							$59.95
Hand	MC-44DM		*	std	std									std							$79.95
Hand	MC-45														*		*	*	*		$79.95
Hand	MC-45DM					std	std								std	std	std	std	std		$79.95
Hand	MC-48B	*	*	*		*	*		*	*	*	*	*	*	*	*	*				$89.95
Hand	MC-52DM			*	*																$79.95
Hand	MC-53DM					*	*	std								*	std			std	$79.95
Desk	MC-60A	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*		*	$139.95
Desk	MC-80	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	$109.95
Modular Mike Switch	MJ-89							*									*				$69.95
Modular Plug Adapt	MJ-88							*													$32.95
External Speaker	SP-41	*	*	*	*			*		*	*	*	*	*	*			*	*	*	$49.95
	SP-50B	*	*	*	*			*		*	*	*	*	*	*			*	*	*	$55.95
Voice Synthesizer	VS-2											*									$69.95
	VS-3																			*	$39.95
Noise Filter	PG-3B	*	*	*	*			*		*	*	*	*	*	*		*	*	*	*	$29.95
Tone	TU-7									*	*	*									$54.95
	TSU-5		*																		$59.95
	KQT-8			*	*								*	*							$49.95
	TSU-7														*		*	*	*		$59.95
	TSU-8						*	*							*		*	*	*		$59.95
DTMF Unit	DTU-2				*	*															$32.95
Memory Unit	ME-1					*															$39.95
Mobile Mount	MB-11											*	*	*			*	*	*		$19.95
	MB-14																*				$49.95
	MB-201		*	*	*			*							*					*	$25.95
	MB-430								*												$49.95
Power Cable	PG-2N	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	$17.95
Data Cable	PG-5A																			*	$15.95
Extension Cables	DFK-3C																*			*	$44.95
13'	DFK-4C																*			*	$64.95
22'	DFK-7C																*			*	$99.95

KENWOOD

VHF / UHF MOBILES

Multi-Band Mobile

HRO
Discount Prices
TM642AD $739.95
TM742AD $689.95



TM-642AD
2m & 220 MHz Plus
$989.95

TM-742AD
2m & 440 MHz Plus
$959.95
Suggested List Prices

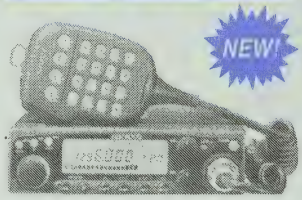
Free Duplexer
Limited Time Offer
TM-742AD Only

These multi-band FM transceivers provide dual band (144 / 440 MHz or 144 / 220 MHz) operation and the capacity to expand to triple band by adding an optional module for 50 MHz, 220 MHz, or 1200 MHz.

- Extended 2 meter receive .
- TM-742AD covers 144 MHz and 440 MHz at 50 W on 2m, 35 W on 440 MHz.
- TM-642AD covers 144 MHz and 220 MHz at 50 W/25W.
- Multiple scan modes.
- Built-in DTSS with pager and CTCSS encode.
- Backlit microphone.
- Independent receive function with display for each band. Choice of single, dual or triple band operation. Triple band cross-band operation is available.
- 100 memory channels plus a call channel for each band.
- Direct frequency input to the VFO from DTMF microphone.
- Remote front panel mount kits optional.

Single-Band

NEW!

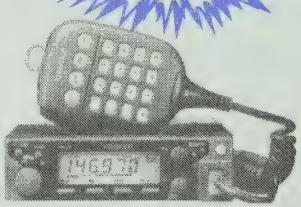


TM-541A – 1.2 GHz
$499.95
Coming Early 1998

This compact 1.2 GHz FM transceiver has 10 watts output on high power, 1 watt on low. Includes a backlit microphone.

- FM transceiver on 1240-1300 MHz.
- 20 multifunction memory channels.
- Optional DTSS unit allows selective calling and paging (DTU-2).
- Encode built in. Decode with KQT-8 option.
- Needs external 13.8 VDC power supply.

HRO
Discount Prices
TM261A $269.95
TM461A $449.95
TM331A $489.95



TM-261A – 2 meters
TM-461A – 70 cm
TM-331A – 220 MHz

Mobile communications just got easier with these fully equipped, user-friendly single banders. Both have high RF output, rugged construction (MIL-STD), 60+2 (call) multi-function memory channels, memory name function with 6-digit alphanumeric display, DTSS selective calling, multi scan capability, dual menu system, multi-function microphone and wireless cloning function. They also have air-band receive, auto repeater offset (TM-261A), repeater reverse switch, built-in CTCSS tone encoder (decode optional), busy channel lockout, auto power off and time-out timer.

Dual-Band Mobiles

HRO
Discount Price
$449.95

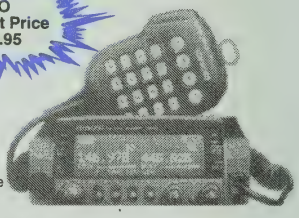
NEW!

TM-G707A
$519.00
Suggested List Price

The TM-G707A FM dual bander has been specifically designed for mobile operations. The display is an extra large amber color with a 4 step dimmer for easy viewing in all lighting conditions.

- Simple operation. Programmable memory system stores five operating profiles with recall by pushing just one button.
- 180 memory channels with Memory Name Function which identifies each memory channel with up to 7 alphanumeric characters.
- Multiple scan functions including priority and CTCSS tone.
- Built-in duplexer.
- Memory shift for odd splits and auto repeater offset (2m).
- PC programmable.
- Built-in CTCSS encoder/decoder.
- Packet ready for 1200/9600 BPS packet including front panel connector.
- Supplied MC-53DM multi-function backlit mike with DTMF.
- Optional quick release detachable front panel.

HRO
Discount Price
$509.95



TM-V7A
$739.00
Suggested List Price

The TM-V7A is easy-to-operate with its cool-blue display modes.

- Simultaneous receive on VHF and UHF plus simultaneous receive of two frequencies on the same band.
- 50 watts output on 2 meters (144–148 MHz), 35 watts output on 70 cm (438 – 450 MHz).
- Five-in-one programmable memory. Five different operating profiles,
- 280 memory channels (180 when using Memory Name Function which allows identifies each memory channel with up to 7 alphanumeric characters.).
- Multiple scan functions and tone scan.
- Voice synthesizer with (optional VS-3).
- Built-in duplexer.
- Visual scan with a pause.
- Built-in CTCSS encoder/decoder.
- Packet ready for 1200/9600 BPS packet including a front panel connector.
- Supplied MC-53DM multi-function backlit mike with DTMF.
- EZ-Clone programming software.
- Optional quick release detachable front panel (DFK-4C 13' and DFK-7C 22' cables).

VHF / UHF All Mode

HRO Discount Price $1599.95

TS-790A

The TS-790A was designed to be the ultimate in VHF / UHF all-mode operation. Special features make it easy to use as an Oscar station.

- Operates all modes SSB, CW, FM.
- 2m and 440 MHz are standard with dual displays. Optional 1.2 GHz with UT-10.
- Receives 140-168 MHz. Modifiable for MARS / CAP transmitting.
- Dual VFO with tracking and dual watch.
- IF shift, RIT, noise blanker, and fast/slow AGC.
- Channelized tuning for normal FM repeater use.
- 59 memories with alert and call channels.
- Standard and non-standard channel splits can be stored in memories.
- Optional VS-2 voice synthesizer and optional TSU-5 decode unit.
- Requires external 13.8 VDC power supply.

6 Meter Mobile

HRO Discount Prices TS60S $969.95

TS-60S

The TS-60S is for 6 meters. It has all-mode operation (AM, CW, SSB and FM) with 90W on CW / SSB / FM and 25 watts on AM. The rig has 2 VFO's and 100 memories. Compact size and weight makes it the perfect 6 meter mobile rig.

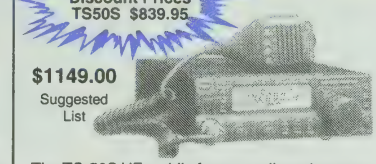
- DDS with "Fuzzy" control logic.
- Speech processor.
- Weighs only 6.4 pounds.
- Convenient menu programming.
- Full/semi break-in.
- All-mode squelch and CTCSS encode built-in.
- Automatic gain control (slow/fast).
- IF shift and TF set.
- Computer control (optional).

HF Mobile

HRO Discount Prices TS50S $839.95

TS-50S

$1149.00 Suggested List



The TS-50S HF mobile features all-mode operation (AM, CW, SSB and FM) with 100W on CW / SSB / FM and 25 watts on AM. It has 2 VFO's and 100 memories. Compact size and weight makes this the perfect mobile rig.

- 500 kHz–30 MHz general coverage receiver.
- DDS with "Fuzzy" control logic.
- Speech processor.
- Weighs only 6.4 pounds.
- Full/semi break-in.
- Convenient menu programming.
- All mode squelch.
- Automatic gain control (slow/fast).
- IF shift and TF set.
- Computer control (optional).

Handheld Battery Packs / Chargers

Battery	Voltage	Rating MAH	Desk Charger	Radio Series	HRO Price
KNB-5A	7.2	800	KSC-7/8	TH-25/26/45/46/55/75/77	$63.95
KNB-6A	7.2	1100	KSC-7/8	TH-25/26/45/46/55/75/77	$99.95
KNB-7A	12	800	KSC-7/8	TH-25/26/45/46/55/75/77	$89.95
PB-13	7.2	700	BC-15A	TH-27/47/28/48/78	$67.95
PB-17	12	700	BC-15A	TH-27/47/28/48/78	$89.95
PB-18	7.2	1100	BC-15A	TH-27/47/28/48/78	$89.95
PB-32	6	600	KSC-14	TH-22AT/42AT/79A	$66.95
PB-33	6	1200	KSC-14	TH-22AT/42AT/79A	$79.95
PB-34	9.6	600	KSC-14	TH-22AT/42AT/79A	$89.95
PB-36	7.2	950	KSC-14	TH-235A	$42.95
PB-37	12	950	KSC-14	TH-235A	$57.95

Kenwood Power Cables

Part Number	Radio	HRO Price
PG-2Z	TS-140, 690, 790, 450, 850, 130, 440, 570	$37.95
PG-2N	TM-2530/50/70, 721, 621A, 221/321/421, 241, 231/431/531, 251/451/551, 255/455, 261/461, 441, 201B, 401B, 541, 631, 642A, 731, 741, 941, 732A, 733A, 642A, 742A, 942A, TR-751A	$17.95
PG-2W	TH-26, 46, 28, 48, 79, 235A	$17.95
PG-2Y	TS-50S/60S	$39.95
PG-3J	TH-22AT, 26, 27, 46, 47, 79A, 235A	$37.95

See Our Web Page: http://www.hamradio.com

Kenwood Handheld Options

Option	Model	21BT 31BT 41BT	22AT 42AT	26AT 46AT	27AT 47AT	28A 48A 78A	25AT 45AT 75AT	77A	79A (D)	215AT 315AT 415AT	225 AT	235	2600A 3600A	HRO Price
Headset	HMC-3		*	*	*		*	*	*	*	*	*		$59.95
	EMC-1								*					$43.95
	EMC-3											*		$29.95
Speaker Mike	SMC-32	*	*	*	*	*	*	*	*	*	*	*	*	$52.95
	SMC-33		*	*	*	*		*	*			*		$65.95
	SMC-34		*	*	*	*		*	*			*		$39.95
Prog. Tone Decoder	KQT-8						*							$49.95
	TSU-7			*		std								$59.95
	TSU-8		*											$58.95
DC/DC Converter	KVC-1							*						$14.88
	PG-2W		*		*	*						*		$17.95
Filtered Cigarette Lighter Cord	PG-3J				*			*				*		$37.95
	PG-3E						*			*	*			$49.95
Base Quick Charge	BC-15A				*	*								$79.95
	KSC-14		*						*			*		$87.95
Battery Case	BT-8				*	*								$29.95
	BT-9		*						*					$29.95
	BT-10											*		$12.95
Softcase	SC-33					*								$21.95
	SC-34					*								$24.95
	SC-37		*											$24.95
	SC-39		*											$24.95
	SC-41								*					$24.95
	SC-43								*					$24.95
Wall Charger	BC-17		*											$29.95

KENWOOD

HANDHELDS

Dual Band

HRO Discount Prices
G71A–$349.95
G71A-HP–$369.95

TH-G71A

$429.95
Suggested List Price

Looking for a compact, high performance 2 m / 70 cm dual-bander with an affordable price tag? The TH-G71A is the right rig. It fits easily in the palm of your hand.

- Backlit keypad.
- 6 watts (VHF), 5.5 watts (UHF) at 13.8 VDC.
- PC programmable with 200 memories.
- CTCSS tone scan.
- Wide frequency coverage including aircraft.
- DTMF memory.
- TM-V7A remote control (DTMF remote).

HRO Discount Prices
A(D) HP $369.95
A(D) $304.95

TH-79A (D)-HP

5 watts
$579.95

TH-79A (D)

2.7 watts
$549.95
Suggested List Prices

Kenwood's TH-79A (D) Deluxe dual-band handheld offers operating ease and powerful performance in a compact, lightweight design.

- Skip-Scan feature included.
- Dot-matrix LCD and menu system. Displays frequency data and a menu system with full alphanumeric function display and settings
- 2.7 watts on 2 meters. 2.0 watts on 70 cm with the standard PB-32 NiCd battery.
- 5.0 watts on both bands with optional PB-34 NiCd battery or 13.8 VDC operation.
- 82 non-volatile memory channels, with ID. An alphanumeric ID (max. 7 characters) can be stored with each channel. No battery backup is needed.
- Features full-duplex cross-band operation and has the ability to simultaneously receive two frequencies even when on the same band.
- Equipped with a high efficiency FET power module.
- Guide function on the LCD panel display eliminates the need to carry a manual.
- DTMF key pad with memory function.
- Dual Tone Squelch with page.

Single Band

HRO Discount Prices
22AT–$234.95
42AT–$319.95

TH-22AT

2m - $349.95

TH-42AT

70 cm - $389.95
Suggested List Prices

High Power
TH-22AT-HP
5 watts–
$269.95

These 2m or 440 MHz transceivers are ultra compact hand helds.

- Extended receiver coverage 136 - 174 MHz on the TH-22AT.
- Five watts output with optional PB-34 battery or with 13.8 VDC power.
- 3 selectable power output levels.
- Operates from 5.0 to 16 VDC allowing easy connection to the car battery or power supply.
- 40 memories with odd offset capability in one memory.
- Selectable memory channel number display mode.
- Multiple scanning functions.
- Tone alert system with received time indication.
- Wireless cloning function.
- Built-in CTCSS tone encoder, Time Out Timer, & busy channel lock out.
- DTSS Dual Tone Squelch System with pager function built-in.
- DTMF memory for auto-dial operation, five 15-digit channels.

TH-235A

2 m - $139.95

TH-235A-HP

2 m - $199.95
HRO Prices

The TH-235A 2 meter handheld is designed to be user friendly and is packed with features.

- 60 non-volatile memories.
- Built-in CTCSS tone encoder and optional decoder (TSU-8)
- 1.5 watts output with std PB-36 battery; 5 watts with optional PB-37 battery and drop-in KSC-8A charger.
- DTSS selective calling.
- Multi-scan capability: full band scan, programmable band scan, memory scan.
- DTMF memory function with 10 16-digit DTMF codes for autodial.
- 60 memory channels and built-in keypad.
- Programmable squelch.
- Wireless cloning function.
- LCD display with 2 backlighting modes.
- Repeater reverse switch.

Kenwood Handheld Specifications

Model	Freq Range	Power Supply	Power Out†	Current Transmit	Current Receive	Sensitivity	Height in(cm)	Width in(cm)	Depth in(cm)	Weight oz(g)	HRO Discount Price
TH-22AT	144-148 MHz	6 VDC	3 W	1.3 A	45 mA	<.16 µV	4.6 (11.7)	2.2 (5.6)	.96 (2.5)	10.2 (290)	$234.95
TH-42AT	438-450 MHz	6 VDC	2.5 W	1.6 A	45 mA	<.18 µV	4.6 (11.7)	2.2 (5.6)	.96 (2.5)	9 (242)	$319.95
TH-G71A	2m & 440MHz	6 VDC	2.5 W	1.2 A	70 mA	<.18 µV	4.4 (11.2)	2.1 (5.4)	1.3 (3.3)	11.6 (330)	$349.95
TH-G71A-HP	2m & 440MHz	6 VDC	2.5 W	1.2 A	70 mA	<.18 µV	4.4 (11.2)	2.1 (5.4)	1.3 (3.3)	11.6 (330)	$369.95
TH-79A (D)	2m & 440MHz	6 VDC	2.7 W#	1.3 A	80 mA	<.18 µV	5.1 (12.9)	2.1 (5.6)	1 (2.5)	15 (400)	$349.95
TH-235	144-148MHz*	7.2 VDC	1.5#	0.8 A	50 mA	<.16 µV	5.8(14.7)	2.3(5.8)	1.2(3.0)	12.7(351)	$139.95

† Higher power output with optional batteries # 2 watts for 440 MHz *136-174MHz receive

STANDARD®

VHF/UHF MOBILES

2 Meter

HRO Discount Price $499.95

C1208A

$529.00
Suggested List Price

This 2-meter rig fits anywhere, yet puts out a full 50 watts. With all controls and the large liquid crystal display in the speaker/microphone, this rig can be mounted under the seat, behind the dash, or in the trunk (with optional extension cable). All this plus it's packet ready (up to 9600 baud) and includes wide range (100-200 and 250-520 MHz) receive.

- Frequency range: transmit 144-148; receive 100-199.995 plus 250-519.995 MHz, FM or AM, and AM aircraft.
- Select power output of 50, 10, or 3 watts.
- 100 memories store frequency, offsets and CTCSS tones.
- CTCSS encode / decode built-in.
- DTMF auto dialing, 10 memories of 15 digits each.
- 6 modes of scanning including priority and CTCSS.
- Built-in quiet cooling fan.
- Mobile mounting bracket and 9-foot power cord included.

Triple 2m / 70 cm / 6m

HRO Discount Price $879.95

C5900DA

$1049.00
Suggested List Price

The compact, full-featured C5900DA tri-band mobile covers 2m, 70cm and 6m. It offers wireless remote control from your HT DTMF pad, 1200-9600 baud packet and cross band repeater operation.

- 80 memories (each side) store frequency, offset, CTCSS tones.
- Expandable 200 memories each side with optional CMU161.
- CTCSS Encode/Decode standard.
- Extended receive frequency range: 44 MHz to 1020 MHz (cellular blocked).
- Transmit on amateur bands. MARS and CAP modification available with permit.
- DTMF autopatch dialing, 12 memories, 15 digits.
- Eight kinds of scan include 1 MHz, entire band, program, memory, and tone.
- 7 priority hyper frequencies.
- Snap on front display or remote installation.
- Backlit keypad and display.
- Dual frequency display; Left side 6m, 2m and 70 cm. Right side 2m and 70 cm.
- Antenna triplexer built-in.
- 45 watts: 6 meter; 50 watts: 2 meter; 35 watts: 70 cm.

Dual 2m / 70 cm

C5718DA

HRO Discount Price $699.95

$849.00
Suggested List Price

This is the smallest, lowest price twin-band mobile to deliver all these features. Operate the C5718DA from its optional snap-on front panel with twin frequency display (CRC5700) or mount it under a seat or even in the trunk using the optional cable (CAW571 or CAW572). The C5718DA is packet ready with high-speed, 9600 baud and interface for both VHF and UHF bands. Just connect your TNC and you are on the high speed packet network. Also operates at 1200 and 2400 baud equally well.

- TX 144-147.995 and 420-449.995 MHz.
- Built-in antenna duplexer.
- Dual frequency receive: 2 VHF, 2 UHF or VHF / UHF.
- Extended receive frequency range: 110-200 MHz including AM aircraft and 250-500 MHz.
- Eight scanning options.
- 40 memories (20 per band) store frequency, offsets and tones. 200 memory channels with optional CMU182.
- CTCSS encode / decode standard.
- Full duplex cross-band operation with CTCSS tones. Paging and coded squelch.
- DTMF autopatch dialing.

All Standard Mobiles Are Packet Ready

Standard is the largest manufacturer of VHF/UHF Amateur Radio equipment in the world.

Standard Mobile Accessories

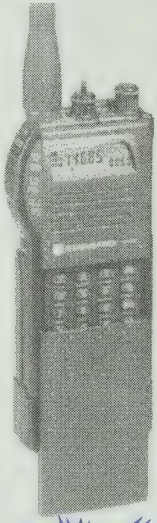
Model	Radio	Description	HRO Discount Price
CAW562	C5608DA/C1208DA	13 ft. extinsion cable remotes radio to trunk (mike with LCD display allows full control)	$48.95
CAW560	C5608DA/C1208DA	Dual microphone cable for second microphone (allows an additional operating position)	$45.95
CSK12	C5718DA/C5608DA/ C1208DA	External extension speaker (necessary if trunk mounting the radio)	$47.95
CRC5700	C5718DA	Removable front panel with twin frequency display	$224.95
CAW570	C5718DA	Split cable for microphone	$63.95
CAW561	C5608DA/C1208DA	6 ft. microphone extension cable	$36.95
CAW571	C5718DA	2 meter microphone extension cable	$49.95
CAW572	C5718DA/C1208DA	4 meter microphone extension cable	$54.95
CAW573	C5718DA	2 meter extension cable for the front panel (CRC5700)	$27.95
CAW574	C5718DA	4 meter extension cable for the front panel (CRC5700)	$39.95
CAW575	C1208DA	Extra 12 volt power cable 15 ft	$29.95
CAW576	C1208DA	Extra 12 volt power cable 9 ft	$26.95
CAW590	C5900DA	Split cable for microphone	$55.95
CAW591	C5900DA	3 meter extension cable for LCD display	$40.95
CAW592	C5900DA	5 meter extension cable with connection for mike & speaker	$57.95
CAW593	C5900DA	8 meter extension cable with connection for mike & speaker	$74.95
CMU161	C5900DA	200 memory option module	$48.95
CMU182	C5718DA	200 memory option module	$48.95

STANDARD®

Ultra-Thin

C288A
220 MHz
Thin Handheld
$449.00
Suggested List

- 2.5 Watts with standard battery, 5 Watts at 9.6VDC.
- Ten 15-digit autodial memories.
- Advanced H.E.C. technology.
- Slide cover protects keyboard.



HRO Discount Price $359.95

Small 2 Meter

C156A
2 Meter
Handheld
$289.00
Suggested List

The C156A is a handheld that everyone can afford. It has all of the user-friendly features that Standard users have come to expect. There is a bright, clear dot-matrix display with alphanumeric ID as well as frequency. The 100 memory channels allows storage of all the repeater and simplex frequencies that you need to operate.

- 144-147.995 MHz transmit.
- 135-174 MHz receive.
- 100 memory channels.
- Scan with pause, busy or hold.
- Memories store alpha-numeric titles, repeater offset frequency.
- Dual watch mode.
- Power output with CBT156 dry cell battery case, 1.8 W.
- DTMF paging and coded squelch. Tone decode with optional CTN115.

HRO Discount Price $199.95

- Automatic repeater offset
- 9 DTMF memories.
- Backlighted display.
- Direct frequency input form the keyboard.

Reeeally Small Dualband

C508A
2m / 70 cm
Dualband
$349.95
Suggested List Price

Great radios come in small packages. The C508A is a dual band HT that fits in your shirt pocket and operates on just 2 AA batteries. It provides 280 mW of out put that is perfect for hitting most local repeaters with its helical designed antenna. It is perfect for Hamfests, picnics or while using your mobile rig in its cross-band repeat mode for quick access to a distant repeater. The HT includes a receiver frequency coverage of 100-180 MHz, 340-400 MHz and 400-480 MHz.

HRO Discount Price $279.95

- 2m / 440 MHz TX.
- Receives 100-180 MHz, 340-400 MHz, and 400-480 MHz.
- Program for AM aircraft receive.
- 60 memories + 2 VFO, 2 call.
- 22-selection menu-driven screen .
- Back-lit display.
- CTCSS 39-tone encode / decode.
- Uses 2AA batteries. Power output 0.28W.
- Approx. 2.28" W, 3.35"L, .98"D.
- Weight 5.65 oz.

Standard Handheld Specifications

Model	Frequency	Power Supply	Power Out Transmit@	Current Transmit	Drain Receive	Sensitivity	Height in	Width in	Depth in	Weight oz
C156A	135-174 MHz†	4-15 VDC	2.5 W	1.0 A	30 mA	.112 µV 12 dB	4.92	2.28	1.02	10.6
C288A	200-249 MHz †	7.2 VDC	2.5 W	700 mAh	38 mA	.158 µV 12 dB	5.8	2.3	1	10
C508A	100-180,340-400,400-480 MHz †	3.0 VDC	.2W	.22 A		.112 µV 12 dB	3.35	2.28	0.98	5.65
C510A	100-180,340-400,400-480,720-950 MHz †*	4.5 VDC	1.0 W	950 mAh	33 mA	.22 µV 12 dB	4	2.28	0.98	5

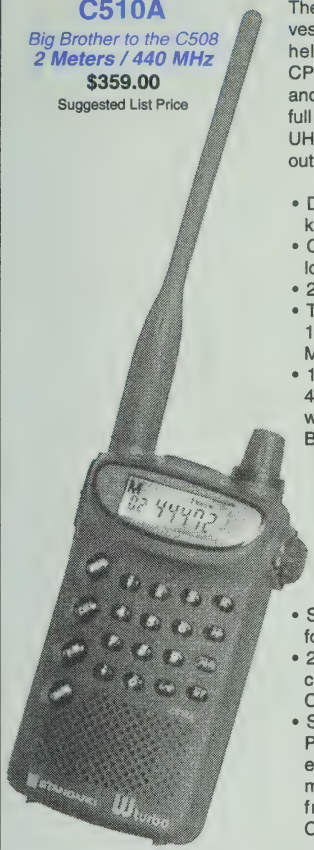
† Transmit amateur bands only. Frequencies are for receive only *Am receive for aircraft @Higher power with optional batteries

VHF / UHF HANDHELDS

Dual Band

C510A

Big Brother to the C508
2 Meters / 440 MHz
$359.00
Suggested List Price



The C510A is a full featured, vest pocket dualband handheld transceiver. Add the CPB510DA Power Booster and this handheld becomes a full featured, high power, VHF/UHF mobile rig providing 50W out VHF and 35W UHF.

- Direct entry, back lighted keypad.
- One watt out with 300 mW low power.
- 28 menu selections.
- Transmit and receive 144-147.995 & 438-449.995 MHz.
- 100-180 and 340-400, 400-480, 720-950 MHz receive with AM aircraft(Cell Phone Blocked).

HRO Discount Price $299.95

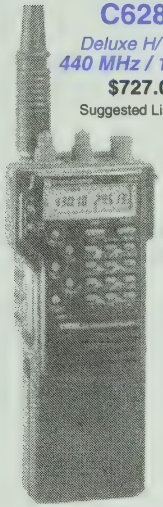
- Store 2 bands in 1 memory for cross band operations.
- 200 memories CTCSS encode/decode plus VFO and CALL.
- Scan modes include Busy, Pause or Hold. Scans 1 MHz, entire band, program, memory, specific memory frequencies, block and CTCSS tones.

Twin-Band FM

HRO Discount Price $669.95

C628A

Deluxe H/T with
440 MHz / 1.2 GHz
$727.00
Suggested List Price



- Transmit and receive on 438-449.995 & 1240-1300 MHz.
- Receive 300-470 & 1240-1300 MHz.
- Power output with standard battery 2.5 W / 440 MHz, 1 W / 1.2 GHz.

Tri-Bander

HRO Discount Price $599.95

C568A

Compact Tribander
2 m/70 cm/1.2 GHz
$699.00
Suggested List Price

- Six twin receive and transmit configurations.
- Menu driven transceiver.
- AM programmable and auto detect for aircraft.
- Power output on 2m: 5 W, 2.5 W, or 350 mW.
- 40 memories.
- MARS and CAP mods available.

	C628A	C568A
•Memory channels:	40 (20 +20 "limited") +2 call +2 vfo (non-removable memory unit).	40 (opt. 40- or 200-mem. units plug in).
•Sensitivity (ham bands):	0.158 µV for 12 dB SINAD.	0.158 µV for 12dB SINAD.
•NiCd battery pack:	700 mAh, 7.2 VDC standard! Other sizes optional.	700 mAh, 7.2VDC std. (fits 228/528/628).
•Power output (12VDC):	1.2 GHz: 1 W high).	5 W high, 2.5 W mid, 350 mW low.
•External input voltage range:	6.0 to 16 volts DC.	6.0 to 16 V. DC w/included CMA181.
•Battery Save mode:	Also automatic power-off mode.	Also automatic power-off mode Battery save adjustable.
•Subaudible tone deck:	CTCSS encode and decode standard.	CTCSS encode / decode standard.
•Paging function:	Also DTMF coded squelch.	Also DTMF squelch, even w/CTCSS.
•Cross-band operation (full-duplex):	Push-button control of cross-band repeat mode.	P.B. control of Cross-band repeat.
•Twin-Band (not just dual-band):	Receives on 1 band while transmitting on the other.	RX 1 band while TX on other band.
•Scan function:	5 scan modes per band, each band is independent.	5 scan modes; 3 types on each band.
•Low current drain (Twin-band):	70 mA squelched receive, 32 mA battery save.	70 mA squelched RX, 25 mA batt.save.
•Even less current drain in single band mode:	36-45 mA squelched, 17-18 mA batt save.	36-45 mA sq., 17-18 mA batt.save.
•Cloning (duplicate program) over the air:	Simply transmit to another 628A.	Simply transmit to another C558A.
•Size (approximate, w/battery, w/o protrusions):	6.2" H x 2.2" W x 1.2" D.	5.1"H x 2.2"W x 1.2"D.
•Weight (approximate):	17 oz with battery and antenna.	12.5 oz with battery and antenna.
•MARS and CAP (copy of license required):	Info available from Ham Radio Outlet.	Info available from HRO.

STANDARD®

Presenting the most advanced, highest quality radios available today!

Standard Handheld Accessories

Model	Description	C108A	C156A	C168A C468A	C158A	C188A C288A C488A	C228A C528A C628A	C178A	C508A	C510A	C558A	C568A	HRO Price
	Microphones/Speakers												
CHP111	Headset/Boom Mike (PTT)	*	*	*	*	*	*	*	*	*	*	*	$48.95
CHP150	Headset/Boom Mike (VOX AND PTT)	*	*	*	*	*	*	*	*	*	*	*	$87.95
CMP111	Speaker Microphone	*	*	*	*	*	*	*	*	*	*	*	$58.95
CMP113	Clip-on Submini Microphone with Earphone	*	*	*	*	*	*	*	*	*	*	*	$48.95
CMP115	Mini Speaker Microphone	*	*	*	*	*	*	*	*	*	*	*	$53.95
CMP123	Ear microphone								*	*		*	$63.95
CMP127	Remote miccrophone & speaker									*			$69.95
	Memory												
CMU160	Extra 40-Memory Plug-In Unit (Swap in-and-out)			*							*		$19.95
CMU161	200-Memory Plug-In Unit (Swap in-and-out)			*				*			*	*	$48.95
CMU181	Extra 40-Memory Plug-In Unit (Swap in-and-out)					*							$39.95
CMU182	200-Memory Plug-In Unit (Swap in-and-out)					*							$48.95
	Batteries, etc												
CNB150	Opt. Small NiCd, 7.2VDC, 400mAh				*		*				*		$82.95
CNB151	Standard NiCd Batt, 7.2VDC, 700mAh				*		*				*		$82.95
CNB151GY	Standard NiCd Batt, 7.2VDC, 700mAh										*		$83.95
CNB152	Opt. High-Power NiCd Batt. 12VDC, 600mAh				*		*				*		$99.95
CNB153	Opt. Long-Life NiCd Batt, 7.2VDC, 1000mAh				*		*				*		$99.95
CNB155	Opt. NiCd Batt, 4.8VDC, 600mAh		*										$30.95
CNB156	Opt. NiCd Batt, 6.0VDC, 600mAh		*										$33.95
CNB157	Opt. NiCd Batt, 9.6VDC, 600mAh		*										$42.95
CNB158	Opt. NiCd Batt, 6.0VDC, 1200mAh		*										$44.95
CNB160	Opt. Small NiCd, 6VDC, 300mAh			*									$19.95
CNB161	Standard NiCd Batt, 7.2VDC, 700mAh			*									$19.95
CNB162	Opt. High-Power NiCd Batt. 12VDC, 600mAh			*									$19.95
CNB163	Opt. Long-Life NiCd Batt, 7.2VDC, 1000mAh			*									$19.95
CNB171	Standard NiCd Batt, 7.2VDC, 700mAh							*				*	$109.95
CNC172	Opt 12V 600 mAh NiCd Batt							*				*	$109.95
CNB173	NiCd Battery 7.2V 1100 mAh							*				*	$99.95
CNB181	Opt. Small NiCd, 4.8VDC, 700mAh					*							$104.95
CNB182	Opt. High-Power NiCd Batt. 9.6VDC, 600mAh					*							$104.95
CNB183	Opt. Long-Life NiCd Batt, 6.0VDC, 1100mAh					*							$97.95
CNB184	Standard NiCd Batt, 6.0VDC, 700mAh					*							$69.95
CNB401	NiCd Battery Pack	*							*				$22.95
CNB510	NiCd Battery Pack									*			$33.95
CBT151	Alkaline Case, for 6 AA batteries				*		*						$22.95
CBT151GY	Alkaline Case, for 6 AA batteries										*		$22.95
CBT160	Alkaline Case, for 5 AA batteries			*									$21.95
CBT171	Battery Case (6 cells)							*				*	$21.95
CBT175	Battery Case (2 cells)							*					$21.95
CBT181	Alkaline Case, for 4 AA batteries					*							$18.95
CBT182	Alkaline Case, for 5 AA batteries					*							$28.95
CAX160	Battery Separation Cable (Remote Battery Adapter)			*									$39.95
	Chargers, etc												
CAW150	Mobile 12 V Power Cable w/Lighter Plug			*	*	*	*	*			*	*	$18.95
CAW151	12V Power Cable			*	*	*	*	*			*	*	$14.95
CAW151B	12V Power Cable		*										$18.95
CAW152	Mobile Cable, Lighter plug & Noise Filter			*	*		*	*			*	*	$30.95
CAW152B	Mobile Cable, Lighter plug & Noise Filter		*										$28.95
CCA180	Chg.Adapt.,CBT160(NiCd's)to Wall Chgr. or CMC150			*									$27.95
CMA181	Mobile 12 V Power Cable w/Lighter Plug (w/Adapter)					*							$42.95
CMA510	Mobile Adapter									*			$99.95
CMC150	Mobile Charger (not for 12VDC NiCd's or 9.6VDC NiCd's)		*	*	*	*	*	*			*	*	$28.95
CSA181A	Peak-Detecting Auto-Rapid Desktop Charger			*	*	*	*	*			*	*	$109.95
CSA181AB	Peak-Detecting Auto-Rapid Desktop Charger		*										$89.95
CSA401A	NiCd Battery Charger	*											$48.95
CSA510	NiCd Battery Charger									*			$89.95
CWC156A	Wall charger (CNB155/156/158)		*										$9.95
CWC151A	Wall charger (CNB157)		*										$29.95
	Cases, etc												
CAX02	Bottom Cover (pair)				*		*						$12.95
CAX03	Bottom Cover			*				*				*	$12.95
CBH160	Spring-Loaded Clip	*		*									$12.95
CLC151	Std case for CBT151 and CNB151				*								$25.95
CLC152	Large Case for CNB152 and CNB153				*								$26.95
CLC157	Large Case for CNB157 and CNB158		*										$23.95
CLC160	Small Soft Case (use with CNB160)			*									$23.95
CLC161	Med. Case (w/CNB161 or CBT160)			*									$23.95
CLC162	Large Soft Case (use with CNB162/163)			*									$28.95
CLC171	Std case for CBT171 and CNB171							*					$30.95
CLC172	Large case for CNB172 and CNB173							*					$30.95
CLC181	Small Soft Case (use with 181 or CBT-181)					*							$23.95
CLC182	Med. Case (w/CNB182/83/84 or CBT182)					*							$25.95
CLC401	Standard Soft Case	*											$16.95
CLC402	Deluxe Soft Case	*											$23.95
CLC519	Deluxe Soft Case								*				$25.95
CLC501	Standard softcase						*						$23.95
CLC510	Med. Case (w/CNB151 or CBT151)									*			$29.95
CLC521	Large Soft Case (use with CNB152/153)						*						$29.95
CLC550	Med. Case (w/CNB151 or CBT151)										*		$29.95
CLC551	Large Soft Case (use with CNB152/153)										*		$31.95
CLC555GN	Pouch (Green)			*	*			*			*	*	$34.95
CLC555OR	Pouch (Orange)			*	*			*			*	*	$34.95
CLC560	Std carrying case (use with CBT171 and CNB171)											*	$27.95
CLC561	Large carrying case (use with CNB172 and CNB173)											*	$27.95
CMB111	Mobile Bracket			*	*	*	*	*			*		$22.95
CMB112	Mobile Bracket		*	*	*	*	*	*			*	*	$27.95

YAESU

HF TRANSCEIVERS

FT-1000MP
The Digital Specialist
$3599.95
Suggested List Price

HRO Discount Price $2819.95

Although this HF transceiver works in all modes (SSB, CW, FSK, AM, FM, Packet), it is optimized for digital communications modes. The enhanced digital signal processing (EDSP) system provides four random-noise reduction settings, selectable bandpass filtering with adjustable low and high cut responses, and transmitted audio enhancement. Also, an automatic seeking EDSP notch filter identifies and eliminates interfering heterodynes and carriers should they appear in the passband.

Two VFO knobs allow individual adjustments to the Main and Sub VFO's to provide in-band dual receive, even on different modes and bandwidths. The "Shuttle-jog™" tuning enhancement allows quick QSY up or down the band with a slight turn of the wrist.

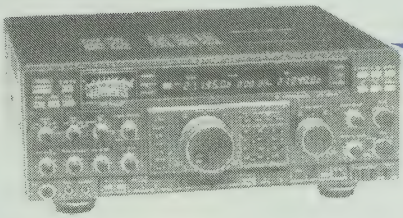
Direct Digital Synthesizers (DDS) provide extremely fine funing steps, thirteen of them, selectable down to 0.625 Hz per step. A full-featured contest memory keyer, provides CQ message generation along with contest numbers.

Built-ins: a lightweight switch-mode AC power supply and a high-performance high-speed automatic antenna tuner, with 39 frequency information memories.

- General coverage receiver 100 kHz to 30 MHz.
- Power output 100 watts.
- Dual in-band receive with separate S meters.
- Collins mechanical filters: 455 kHz / 2.75 kHz SSB built in. A 455 kHz / 500 Hz CW is optional.
- Wide receiver dynamic range with separate, optimized FET RF; preamps for high and low bands.
- Cat system capability with built-in RS-232C level converter.
- Transverter jack for VHF/UHF operation (display indicates actual VHF or UHF frequency).
- Selectable antenna jacks. Separate receive-only antenna jack also included.
- Custom configuration via new menu system.
- Quick memory bank (QMB) system for instant recall of important memories.

Remote Control FH-1

The **FH-1** is a remote control accessory designed to enhance the operating flexibility of your FT-10000MP. It permits remote control of the contest memory keyer, VFO/memory and main/sub VFO. It connects by a 3.5 mm miniature mono plug to the REMOTE jack on the rear panel of the FT-1000MP.
HRO Discount Price: $88.95



HRO Discount Price $4199.95

FT-1000D
$5459.00
Suggested List

The FT-1000D employs extensive surface-mount components, 6 microprocessors, and five Direct Digital Synthesizers. Standard are: BPF-1 module for cross-band dual receive; TCXO-1 high stability oscillator; XF-C 2.4 kHz SSB filter; XF-D 2.0 kHz SSB Filter; and XF-E 500 Hz CW filter. Options are the XF-F 250 Hz CW filter; XF-455MC 600 Hz sub-receiver CW filter; and the DVS-2 Digital voice recording module.

- General coverage receiver from 100 kHz to 30 MHz.
- Simultaneous dual frequency reception.
- All mode operation (SSB, CW, FSK, AM, FM, Packet). Optimized for digital communications modes.
- Transmitter output is 200 watts. (50 watts AM).
- Special features for CW operation.
- Band pass filter BPF-1 module.
- 99 memories.
- CAT system for computer control.
- Built-in power supply.

FT-1000
$3399.95
HRO Price

For the budget minded ham Yaesu offers the FT-1000. It has most the features of the FT-1000D except the BPF-1, TCXO-1, XF-C, XF-D, XF-E listed for the FT-1000D. Additional options are available.

FT-920
$2299.95
Suggested List Price

HRO Discount Price $1799.95 plus shipping

The FT-920 state-of -the-art transceiver has many advanced features. It offers up to 100 watts of adjustable power on all amateur bands between 160 and 6 meters (25 watts carrier on AM) operating on SSB, CW, AM, AFSK and FSK (an FM module option is available).

The built-in high speed automatic antenna tuner on both receive and transmit. The built-in Digital Voice Recorder allows storage and playback of incoming signals storaging of up to four repetitive messages of up to 16 seconds each.

Electronic Memory Keyer stores CW messages including incremented, imbedded contest numbers. Jacks on front and rear panels allow connection of keyer paddles to one jack and a computer or straight key to the other.

Receiver has Digital Signal Processing filters, automatic notch filter and noise reduction. The front end includes 10 input bandpass filters, PIN diode switching and optimized RF preamplifiers. It features dual VFO's, 99 regular memories, 10 split memories and the ability to assign alphanumeric labels.

Specials Are Listed on the HRO Web Page: http://www.hamradio.com

YAESU

HF TRANSCEIVERS

HRO Discount Price $899.95

FT-840

$1099.95

Suggested List

Here's top-of-the-line quality, high-tech performance, and a wealth of features at an affordable price. The FT-840 blends digital frequency synthesis with the operating convenience and affordability of its predecessor, the FT-747GX. As a first time rig, back-up, mobile, or main station transceiver, the FT-840 has the features and dependability that you appreciate.

Built to handle rigorous field operation, the new intense LCD display affords sharp visibility in bright sunlight. Die-cast heat sink and internal thermally switched fan keep the FT-840 running cool. Modular design circuit boards ensure operating efficiency.

For high performance, the FT-840 features a low noise front end that uses the latest in FET RF amplifier design. It has two DDSs and magnetic encoder for silent, smooth tuning and fast switching. Twin band-stacking VFOs and automatic 10 m FM repeater offset with selectable CTCSS provide the best for 10 m repeater operation.

- General coverage receiver from 100 kHz to 30 MHz.
- Transmit on amateur bands 160-10m.
- Direct digital synthesis (DDS).
- FM repeater operation with automatic 10 meter repeater offset.
- IF shift.
- 100 memory channels (independent transmit / receive per memory).
- Selectable CTCSS encode with optional FM-747.
- CW reverse feature.
- Choice of two optional antenna tuners: FC-10 Matching External Tuner or FC-800 External Remote Tuner.

HRO Discount Price $999.95

FT-600

$1249.00

Suggested List

The compact FT-600 HF base station features the straight forward, sensible layout of a commercial radio with the most-often-used features on the front panel. The radio has a full coverage receiver from 50 kHz to 30 MHz with transmit on the amateur bands from 160 to 10 meters. It excels as an easy-to-use base station or mobile radio.

- Direct Digital Synthesis (DDS) and dual conversion receiver.
- 100 memory channels (4 banks of 25).
- Front mounted speaker with high audio output.
- Direct keypad frequency entry.
- Alphanumeric display.
- Selectable noise blanker.
- Dual watch on receive.
- Has all modes USB, LSB, CW, AFSK and AM.
- Transmitter output is 100 watts with 25 watts AM carrier.
- Has tuning steps of 10 Hz/100 Hz on CW/SSB and 100 Hz/1 kHz on AM.
- Accessories available include: FC-800 automatic antenna tuner, FIF-232C computer interface, FP-800 power supply and a complete selection of filters.

Orders over $100 are shipped FREE via UPS Brown Label

HF Plus 6m / 2m / 70 cm

FT-847

Call for Your Low HRO Price

NEW!

The all-purpose, all-mode FT-847 does it all. Here, in one box, is HF, 6m, 2m, and 440 MHz. This transceiver is ideal for satellite operation, packet, or any of your other ham activities.

- Crossband full duplex operation.
- 100 watts output on HF / 6m; 50 watts on 2m / 430 MHz.
- Normal / reverse tracking.
- Dedicated satellite memories.
- 1200 / 9600 bps packet ready.
- DSP filters: notch, noise reduction, band pass.
- CW sidetone and pitch control.
- Direct frequency keypad entry.
- High resolution 0.1 Hz tuning steps for ultrasmooth tuning.
- Shuttle jog tuning dial.
- Built-in CTCSS / DCS encode / decode.
- Built-in low noise VHF / UHF preamps.
- 13.8 VDC.

HF Antennas

YA-30 Dipole

$249.95

HRO Price

The 83-foot YA-30 broadband dipole antenna is designed to provide optimum performance over the frequency range 1.8-30 MHz. The usual requirements for multiple antennas or an antenna tuner between the rig and antenna are eliminated by the unique broadband design. Handles 150 watts at an SWR of less than 1.9:1 on the amateur bands. Preassembled and pretuned, the YA-30 antenna can be installed in three different ways (horizontal flat-top, inverted-V, or sloper). Comes with 100 feet of RG-8X with PL-259.

NEW!

ATAS-100 Mobile

$319.95

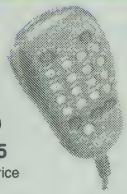
HRO Price

Yaesu HF Specifications

Model	Frequency Range	Power Supply AC	Power Supply DC	Current Drain Xmit	Current Drain Rec	Power Output AM	Power Output FM	Power Output SSB	Power Output CW	Mike Z	Receive Circuitry	Sensitivity †	RIT/XIT Range	Audio Output	HRO Price
FT-1000D	100 kHz - 30 MHz	117/234		1050 VA	95 VA	50 W	200 W	200 W	200 W	500-600 Ω	Quad	< .25 µV	±9.975 kHz	2 W	$4,199.95
FT-1000MP	50kHz - 30 MHz		13.5 VDC	20 A	1.2 A	25 W	100 W	100 W	100 W	500-600 Ω	Double	< .25 µV	±300 Hz	1.5W	$2,819.95
FT-920	100 kHz - 30 MHz, 48-56MHz		13.5 VDC	22 A	2.0 A	25 W	100 W*	100 W	100 W	500-600 Ω	Double	< .25 µV		1.5W	$1,799.95
FT-840	100 kHz - 30 MHz		13.8 VDC	20 A	1.2 A	25 W	100 W	100 W	100 W	500-600 Ω	Double	< .25 µV	±1.25 kHz	4 W	$899.95
FT-847	100 kHz - 30 MHz,50-54 MHz,144-148 MHz,430-450MHz		13.8 VDC	22 A	2.0 A	25 W 12.5 W 2m/70cm	100 W!	100 W!	100 W!	200-10K Ω	Double	< .25 µV		1.5 W	CALL
FT-600	100 kHz - 30 MHz	117/234	13.5 VDC	550 VA	80 VA	25 W	100 W	100 W	100 W	500-600 Ω	Triple	< .25 µV		2 W	$999.95

The FT-990DC version operates on 13.8 VDC only. † Sensitivity measurements for 1.8-30 MHz SSB,CW *Optional module required ! 50 watts on 2m/70cm **Plus shipping

Microphones



MH-39
$84.95
HRO Price

This compact mike for the FT-8500 gives you complete control of the rig from your hand.

MD-100 a8x
$125.95
HRO Price

This desk microphone features selectable low-cut filtering and high-emphasis active filtering that allow you to tailor the microphone response for optimum voice clarity or DX punch. It has a large push-to-talk switch and latching button, along with a large rotary up/down, slow/fast control for scanning.

The MD-100a8x is especially designed for the FT-1000MP and the FT-900, but can be used with the following Yaesu HF transceivers: FT-747GX, FT-757GXII, FT-890, FT-840, and FT-1000.

Power Supplies

FP-1030A

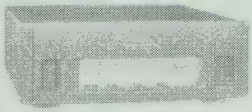
Yaesu has three low profile switching powers supplies. The FP-712 gives 10 amps continuous service with 12 amps intermittent. The FP-1025A has 20 amps continuous and 25 intermittent. The FP-1030A is 25 amps with meters. Operates on either 110 or 220 VAC.

HRO	**FP-712**	**$129.95**
Prices:	**FP-1025A**	**$179.95**
	FP-1030A	**$239.95**

HF Amp & Power Supply

Quadra System
$5990.00
Suggested List

HRO Discount Price $4999.95



Here's all the linear amplifier you should need for operation on both HF (160 to 15 meters) and 6 meters. It is designed for automatic band switching with the FT-1000D, FT-1000MP, FT-920, FT-990 and the FT-900 HF radios.

The amp features 8 MRF150 power MOSFet transistors designed into 4 units of 2 transistors in a push-pull circuit at 48 VDC.

The separate power supply, the VP-1000 allows for easy installation. There are two input voltages, 117 VAC or 220 VAC. Output power is a function of the power supply voltages. At 220 VAC there is 1000 watts out on HF and 500 watts on 6 meters. At 117 VAC the output is 500 watts on HF.

The amplifier comes equipped with a built-in high speed antenna tuner to match the amp to your antennas. It has four antenna outputs and two inputs. The multifunction omni-glow LCD display shows the status of the amplifier. There is automatic system monitoring with VSWR protection.

DC Noise Filter

LF-1
$26.95
HRO Price

Especially designed for mobile use, consists of a heavy choke coil to surpress alternator DC line noise.

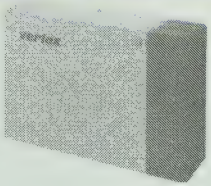
Meters

YS-500
$104.95
HRO Price

YS-60
$129.95
HRO Price

Meters monitor both average and peak transmitter power and voltage standing wave ratio (VSWR) of antenna systems in two way radio stations from 1.6 to 60 MHz (YS-60) or 140 to 525 MHz (YS-500). YS-60 requires 12 VDC for PEP operation.

Repeaters



VXR-5000V / TA-DC
Covers 135-148 MHz for 2 m

VXR-5000U / TC-DC
Covers 440 MHz

- 12 VDC at 7 amp power requirement.
- 25 watts output at 100% duty cycle.
- Built-in CTCSS encode and decode.
- PC programming with optional VX VPL-1 programming cable.
- PC programmable hang and time-out timers.
- Includes DC power cable.
- Wall mount or, with the optional mounting kit, install in a standard 19 inch rack.
- Programming is extra.

Visit HRO on the Web:
http://www.hamradio.com

Family Radio Service

HRO Discount Price $109.95

VXF-1
Family Radio Service
$159.00
Suggested List Price

Special Package Deal 2 for Only $ 199.95

The VXF-1 Adventurer™ portable radio provides 500 mW of quiet, reliable two-way communications within a 2 mile range.

Get up to 30 hours of operation with 3 AA batteries or continuous operation with the optional EDC-15 car adapter. Includes Digital Coded Squelch (DCS) and the exclusive Auto Range Transpond System (ARTS) to alert you when a similarly programmed VXF-1 is out of range.

All 14 available FRS UHF channels are included and no FCC operating license is required. It is thin and light weight to easily fit in your pocket.

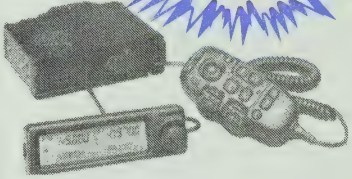
The VXF-1 is available in black or "safety" yellow.

YAESU

Dual Band Mobiles

FT-8500
2 meter & 70 cm

HRO Discount Prices
8500/FS-10 $399.95
8500/MH-39 $379.95



This deluxe, compact transceiver defines "high tech" in mobile engineering. Just four simple flicks of the Smart Controller™ Microphone joystick-type control and you command frequencies, memories and every adjustment. Watch the Spectra-Analyzer™ display activity above and below your current operating channel. The DC voltmeter shows your car battery voltage. Work V+V, U+U or V+U frequencies. Selectable 1200/9600 baud and rear-panel data jack for packet.

- Frequency coverage: 2m receives 110-174 MHz, transmits 144-148 MHz; 70cm receives 420-500 MHz, transmits 430-450 MHz.
- 6 character alphanumeric display.
- 9 memory DTMF autodialer.
- Output power: 2 m 50 / 10 / 5 Watts. On 70 cm 35 / 10 / 5 Watts.
- Cloning feature.
- 3 scanning modes, cross band and one way repeat.
- Choice of microphones: FC-10 or MH-39 DTMF mike.

FT-8100R
2 meter / 70 cm Remote Head Capable
$699.00
Suggested List Prices

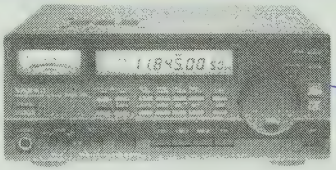
HRO Discount Price
$549.95

It has a high-performance receiver with excellent sensitivity with high immunity from overload and a remote head capability. The transmitter has individually optimized power amplifier sections, efficiently cooled by an aluminum diecast chassis.

- Super-wide receiver coverage accesses 110 to 550 MHz and 750 to 1300 MHz (with cellular frequencies blocked).
- Selectable output power from 50 watts on VHF to 35 watts on UHF. Choose 10 watts or 5 watts on each band.
- Dual receive, duplexer, cross-band repeat, DTMF autodialer.
- Ready for 1200 or 9600 baud packet.
- 110 memory channels (55 each band) store standard repeater shifts, CTCSS data, independent transmit and receive frequencies, packet baud rate and transmit power level.
- Alternating-Band Memory Scan (ABMS) for memory selections is able to alternate quickly between VHF and UHF memory banks .

SWL Receiver

FRG-100B
$719.95
Suggested List Price



HRO Discount Price
$599.95

This receiver provides general coverage reception in CW, SSB, AM and FM modes for 50 kHz to 30 MHz. Reception modes and most receiver functions are push-button selectable from the front panel. A back-lit LCD with adjustable brightness provides frequency read-out (down to 10 Hz) and operating status. 50 fully-tunable memory channels store frequency, mode and filter selection, two additional memories provide band-edge information used in scanning. Selectable steps of 10 Hz, 100 Hz, 1 kHz are standard–other increments are user programmable. Multi-function scanning (memory, band, selectable group, priority) with carrier or time-delay resume. Instant selection of 16 pre-programmed international AM broadcast bands (LW, MW through 11 meters), convenient and instant QSY. Has adjustable BFO, reverse BFO offset and selectable CW sideband. Optional 250 or 500 Hz crystal filters. Includes adjustable SSB carrier offset, selectable AGC rate, noise blanker, all-mode squelch and RF attenuation controls. Programmable On/Off Timer and Sleep Timer.

2 Meter Mobiles

FT-2500M
2 meters
$299.95
HRO Price

The FT-2500M is easy-to-operate front panel design has rubber coated knobs and a large amber display. It receives 140-174 MHz and transmits on 144-148 MHz. Power output is 50 / 25 / 5 watts.

The most often used controls are on the front panel. Has a DTFM mic CTCSS encode is built-in. There are 31 memory channels. A one-piece die-cast chassis and extra large heat sink add toughness.

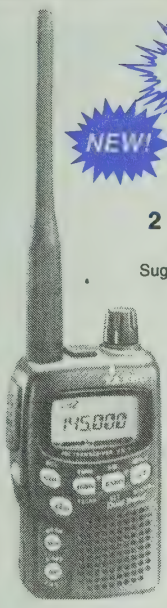
Accessories available include: FTS-17A, CTCSS decode unit; FRG-6, DTMF paging unit; SP-4, external speaker; and FP-700, power supply.

FT-3000M
High Power
2 meters
$439.95
HRO Price

The FT-3000M is the only 70 watt High Power mobile available with a new, true wide band-receiver.

- 110-180, 320-520, 800-999 MHz Receive (cellular blocked).
- 70 watts high power (50, 25, 10 watts also).
- 81 memory channels.
- Keyboard or PC programmable with optional ADMS-2C (see page 29).
- Digital battery voltage display.
- Large, alphanumeric omni-glow LCD display.
- DCS and CTCSS encode included.
- Backlit direct frequency entry DTMF mike included.
- Dual display with dual watch monitoring.
- Crossband repeat (UHF to VHF only).
- Accessories available are:
  FTS-27 CTCSS decode.
  FP-800 20 amp power sply.
  DVS-4 digital voice unit.
  SP-7 external speaker.

DUAL BAND HANDHELDS



HRO Discount Price $279.95

NEW!

VX-1R
2 m / 70 cm
$349.95
Suggested List Price

The world has never seen a dual-band amateur hand-held transceiver which provides ultra-wide frequency coverage in such a small package. At 3.2" x 1.9" x 1" it weighs just over 4 ounces. Output power is 500 mW with the standard battery and up to 1 watt with the optional EDC-15 power cable.

- Covers 76 to 999 MHz (cellular frequencies are blocked).
- 291 memory channels with 6 digit alphanumeric display.
- Built-in CTCSS and DCS encoder / decoder.
- Dual watch to check sub-band activity.
- The Automatic Range Transponder System (ARTS) provides one-touch "on-range" confirmation.
- One touch emergency button can be used for quick access to home channel.
- Quick setup of TV and FM stations with auto memory feature to scan and load channels.
- Automatic repeater shift, cloning one VX-1R to another, ADMS-1D for PC programming.

FT-51R – 2 Watt
$439.95

FT-51R / HP 5 Watt
$479.95
HRO Prices

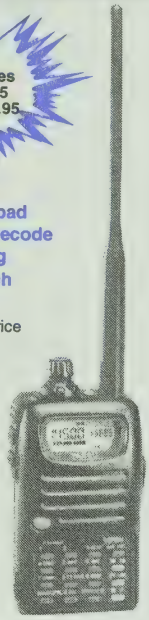
Shown with optional speaker mike

2 m / 70 cm

The easy-to-use FT-51R guides you through total operation with its scrolling instruction menu in the large, backlit display window. Spectrascope™ displays real time, continuous scanning of activity on adjacent channels in VFO mode or 8 of your favorite memories. It has digital battery voltage display, five power levels, the largest backlit dual-band HT keypad made, Smart Mute™, and 2 VFOs on both VHF and UHF. The optional MH-29A2B display mike (shown) allows you to control volume, memory access, VFO, call channel, band selection, and scanning functions.

- 5 power output levels (20 mW to 5 watts) depending on battery selection.
- Alphanumeric display; 8 characters per memory.
- ADMS-1 programming software available.
- Clone from another FT-51R.
- Built-in DTMF decoder shows 8 characters.
- Scanning light signals a busy channel.
- 120 memories (80 with alphanumeric display) store alpha, CTCSS, offset, power level, and split information. Multiple scan modes have individual channel lock-outs.
- Built-in crossband & one-way repeat functions.

HRO Discount Prices
50RD–$329.95
50RDHP–$349.95



FT-50RD
With DTMF keypad
CTCSS Encode / Decode
DVRS, Paging
Coded Squelch
$439.00
Suggested List Price

Here's wide band receive coverage up to 999 MHz (cellular frequencies blocked) with AM, FM-N and FM-W filters. CTCSS and Digital Coded Squelch are included. The HT can be keyboard or PC programmed with the optional ADMS-1D programming system (see below).

Features include 112 memory channels each with offset, CTCSS/DCS and power level; up to 5 watts output; automatic tone search; digital DC voltage display and auto range transpond system to poll other stations to see if they are in simplex range.

Programming Kits

To Program Handhelds: ADMS-1D
FT-10/ 40/ 11/ 41/ 50 /51/VX-1R

To Program Mobiles: ADMS-2D
FT-3000 / 8000 / 8100 / 8500
$39.95

Yaesu Handhelds

Model	Frequency	Mode	Pwr Supply	Power Out	Current Transmit	Drain Receive	Sensitivity	Height in (cm)	Width in (cm)	Depth in (cm)	Weight oz (g)	HRO Discount Price
FT-10R	144-148 MHz #	FM	6.0 VDC	2.5 W*	1.2 A	200 mA	.16 µV / 12dB	3.9 (9.9)	2.3(5.8)	1.2(3.0)	11.5 (325)	$295.95
FT-11R	144-148 MHz †	FM	4.8 VDC	1.5 W*	900 mA	16 mA	.15 µV / 12dB	3.9 (9.9)	2.2(5.5)	1.0(2.5)	9.5(280)	$279.95
FT-11R-HP	144-148 MHz †	FM	9.6 VDC	5 W	1.5 A @ 5W	17 mA	.15 µV / 12dB	3.9 (9.9)	2.3(5.5)	1.0(2.5)	13.9(400)	$299.95
FT-23R	144-148 MHz	FM	7.2 VDC	2 W*	900 mA	19 mA	.25 µV / 12dB	4.8 (12.2)	2.3(5.5)	1.3(3.2)	15(430)	$209.95
FT-33R	220-225 MHz	FM	12 VDC	5 W	1.3 A	19 mA	.25 µV / 12dB	4.8 (12.2)	2.3(5.5)	1.3(3.2)	15(430)	$319.95
FT-40R	430-450 MHz #		6.0 VDC	2.5 W*	1.5 A	200 mA	.16 µV / 12dB	3.9 (9.9)	2.3(5.8)	1.2(3.0)	11.5 (325)	$309.95
FT-41R	440-450 MHz	FM	4.8 VDC	1.5 W*	900 mA	15 mA	.17 µV / 12dB	3.9 (9.9)	2.3(5.5)	1.0(2.5)	9.5(280)	$299.95
FT-50RD	2m/70 cm	FM	6.0 VDC	2.5 W*	1.5/1.6 A	200 mA	.16 µV / 12dB	3.9 (9.9)	2.3(5.8)	1.2(3.0)	11.5 (325)	$329.95
FT-50RD-HP	2m/70 cm	FM	6.0 VDC	5 W		200 mA	.16 µV / 12dB	3.9 (9.9)	2.3(5.8)	1.2(3.0)	11.5 (325)	$349.95
FT-51R	2m/70 cm	FM	7.2 VDC	2.0/1.5 W*	900 mA	195 mA	.15 µV / 12dB	4.5 (12.3)	2.3 (5.5)	1.0 (2.6)	12 (330)	$439.95
FT-51R/HP	2m/70 cm	FM	4.8 VDC	2.0/1.5 W*	1.6/1.9 A	195 mA	.15 µV / 12dB	5.7 (14.6)	2.3 (5.5)	1.0 (2.6)	16.4 (450)	$479.95
FT-911	1240-1300 MHz	FM	7.2 VDC	1W	900 mA	150 mA	.2 µV / 12dB	4.8(12.2)	2.3(5.5)	1.3(3.2)	13(380)	$469.95
VX-1R	.5- 999 MHz@	FM	3.6 VDC	0.5W	500 mA	150 mA	.16 µV / 12dB	3.2(8.1)	1.9(4.7)	1(2.5)	4(125)	$279.95
VXF-1	14 FRS Chan.	FM	3.6 VDC	0.5W				4.2(10.6)	2.2(5.4)	1(2.5)	4(125)	$109.95

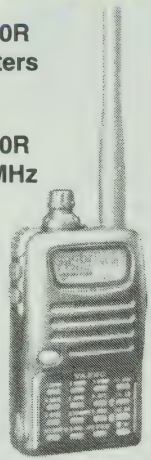
* Power output can be increased depending on the battery pack selected † Extended receiver range and AM aircraft capabilities # Extended Rx range @Cell Phone Blocked

YAESU

HANDHELDS

FT-10R
2 meters

FT-40R
440 MHz



See table below for pricing on various configurations.

A multitude of exclusive features distinguishes the 2m FT-10R and 70 cm / 440 MHz FT-40R. Foremost is the choice of four keypads. These are the first ham handhelds with a MIL-STD 810 rating.

- 2.5 (FNB-40) or 5 (FNB-41) watts.
- Digital coded squelch encode / decode.
- Battery savers extend life.
- Compact, clamshell design, read mounted batteries.
- ARTS, Auto Range Transpond System.
- High audio output design.
- Alpha-numeric display.
- Optional PC programming.
- Dual watch.
- High speed scanning.
- Direct FM improves voice and packet performance.
- Deluxe models have 99 memories and automatic tone search.

HRO Discount Prices
23R-HP–$209.95
33R–$209.95

FT-23R
2 meters
$309.00

FT-33R
220 MHz
$369.00

Suggested List Prices

Yaesu's original compact handhelds are still available. They offer the budget-minded amateur an attractive hand-held. Both models have LCD display with S meter.

- Up to five watts output with optional FNB-12S.
- Multiple scanning options.
- 10 memories with 7 storing odd splits.
- Aluminum alloy case with water resistant seals.
- Optional: CTCSS encode / decode (FTS-12) and DTMF pad (FTT-4).
- Auto battery saver circuit.

HRO Discount Price
$469.95

FT911
1.2 GHz

$569.00

Suggested List Price

This 1.2 GHz ultra-compact full-featured handheld offers features found previously only in larger units.

- 49 memories and 2 VFO's.
- Multiple scanning options.
- Uses the same battery packs as the FT-23 series. The FNB-17 is the standard pack.
- Rubber gasket seals offer protection.
- Standard CTCSS encode / decode included.
- Backlit keyboard and large LCD display.
- Automatic frequency control.
- DTMF encode pad with 10 auto-dial memories and direct key pad entry.
- Automatic power off system.
- VOX operation with optional YH-2 headset.

FT-11R
2 meters
$279.95

FT-11R-HP
2 meters
$299.95

FT-41R
70 cm
$299.95

HRO Discount Prices

Yaesu's handhelds are easy to operate. The new FT-11R-HP is a high-power, 5 watt version of this compact handheld.

- New compact battery design–4.8 volts produces 1.5 watts output.
- Up/down, volume/squelch controls are back-lit.
- Wide receive coverage on FF11: 100-180 MHz, AM aircraft (110-136 MHz).
- Six character alphanumeric display.
- MOSFET power module and TX/RX battery savers.
- 5 watts output with 9.6 VDC (optional battery required).
- Large full-sized back-lit DTMF keypad.
- 150 memory channels.
- Built-in DTMF paging / coded squelch.

FT-10R 2m HT Models

Model	Keypad	Channels	Digital Voice Recorder	Battery Pack	HRO Discount Price
FT-10R/40B-A06	6	30	no	FNB-40	$269.95
FT-10R/41B-A06	6	30	no	FNB-41	$279.95
FT-10R/40B-A16	16	30	no	FNB-40	$269.95
FT-10R/41B-A16	16	30	no	FNB-41	$269.95
FT-10R/40B-A16D	16	99	no	FNB-40	$269.95
FT-10R/41B-A16D	16	99	no	FNB-41	$289.95
FT-10R/40B-A16S	16	99	yes	FNB-40	$284.95
FT-10R/41B-A16S	16	99	yes	FNB-41	$295.95

Yaesu Handheld Batteries and Chargers

Battery	Voltage VDC	Rating mAh	Wall Charger	Desk Charger	Radio Series	HRO Price Battery Only
FNB-2	10.8	425	NC-9B		FT-208/708	$49.95
FNB-4A	12	500	NC-18	NC-50	FT-727/109/209/709	$64.95
FNB-12S	12	600	NC-18	NC-50	FT-23/33/73/411/470	$71.95
FNB-14	7.2	1000	NC-34	NC-50	FT-23/33/73/411/470	$59.95
FNB-17	7.2	600	NC-28	NC-50	FT-23/33/73/411/470	$52.95
FNB-25	7.2	600	NC-28B	NC-50	FT-26/76/415/416/ 530/815/816	$39.95
FNB-26	7.2	1000	NC-34B	NC-50	FT-26/76/415/416/ 530/815/816	$55.95
FNB-27	12	600	NC-18B	NC-50	FT-26/76/415/416/ 530/815/816	$62.95
FNB-31	4.8	600		NC-50	FT-11/41/51	$47.95
FNB-33	4.8	1000		NC-50	FT-11/41/51	$62.95
FNB-38	9.6	600		NC-50	FT-11/41/51	$75.95
FNB-40	6	650	NC-60	NC-50	FT-10R/40R	$48.95
FNB-41	9.6	600	NC-60	NC-50	FT-10R/40R	$58.95
FNB-42	9.6	1100	NC-60	NC-50	FT-10R/40R	$62.95
FNB-53	3.6	700	NC-66		VXF-1R	$19.95
FNB-52LI	3.6		NC-66		VX-1R	$36.95

Yaesu Handheld Accessories

Accessory	Model	10R 40R 50 R	11 41	51R	23R 33R 73R	26 76	209RH	103R 203R 703R	411 811 911	415 815	416 816	470	530	VX-1R	VXF-1	HRO Price
Headset/Boom Mike	YH-2				*	*	*	*	*	*	*	*	*			$30.95
VOX Headset	VC-22		*													$62.95
VOX Headset	VC-23	*														$62.95
VOX Headset	VC-25													*	*	$62.95
Speaker/Mike	MH-12		*		*	*	*	*	*	*	*	*	*			$45.95
Speaker/Mike	MH-32		*		*	*	*	*	*	*	*	*	*			$30.95
Speaker/Mike	MH-34A2B	*														$30.95
Speaker/Mike	MH-34A4B													*	*	$30.95
Speaker/Mike Lapel	MH-19		*		*	*	*	*	*	*	*	*	*			$30.95
Speaker/Mike w/Display	MH-29			*									*			$99.95
Ear Piece Mike	MH-37A2B	*														$30.95
Lapel Mic/Ear Piece	MH-37A4B													*	*	$30.95
Tone Squelch	FTS-6						*									$35.95
Tone squelch	FTS-12				*											$55.95
Tone Squelch	FTS-17A					*			std	std	std	std	std			$47.95
CTCSS Decode	FTS-26											*				$47.95
DC/DC adapter	PA-6				*				*			*				$30.95
DC/DC adapter	PA-10A		*	*												$82.95
DC/DC adapter	EDC-5B	*				*				*	*		*			$26.95
DC/DC adapter	EDC-15													*	*	$38.95
Wall Charger 117 VAC	NC-9B						*	*								$15.95
Wall Charger 117 VAC	NC-18B				*	*	std	*	*	*	*	*	*			$14.95
Wall Charger 117 VAC	NC-28B				*	*			std	std	std	std	std			$14.95
Wall Charger 110 VAC	NC-34B					*										$14.95
Wall Charger 117 VAC	NC-60B	*														$16.95
Wall Charger 117 VAC	NC-66B													*	*	$18.95
Wall Charger 220 VAC	NC-9C						*	*								$17.95
Wall Charger 220 VAC	NC-18C				*		*	*	*	*	*	*	*			$15.95
Wall Charger 220 VAC	NC-28C				*	*			*	*	*	*				$26.95
Wall Charger 220 VAC	NC-34C				*	*			*	*	*	*	*			$22.95
Mobile Charger	CD-2			*												$99.95
Quick charger	NC-50	*	*	*	*	*			*	*	*	*	*			$92.95
Battery 600 mAh 12V	FNB-12S				*				*			*				$71.95
Battery 1000 mAh 7.2V	FNB-14				*				*			*				$59.95
Battery 600 mAh 7.2 V	FNB-17				std				std			std				$52.95
Battery 600 mAh 7.2 V	FNB-25					std				std	std		std			$39.95
Battery 1000 mAh 7.2 V	FNB-26					*				*	*		*			$55.95
Battery 600 mAh 12 V	FNB-27					*				*	*		*			$62.95
Battery 600 mAh 4.8 V	FNB-31		*	*												$47.95
Battery 1000 mAh 4.8 V	FNB-33		*	*												$62.95
Battery 600 mAh 9.6 V	FNB-38		*	*												$75.95
Battery 650 mAh 6.0 V	FNB-40	*														$48.95
Battery 600 mAh 9.6 V	FNB-41	*														$58.95
Battery 1100 mAh 9.6 V	FNB-42	*														$62.95
Battery 700 mAh 3.6 V	FNB-52LI													*		$36.95
Battery	FNB-53														*	$19.95
Battery case	FBA-12					*				*	*		*			$19.95
Battery case	FBA-14		*	*												$19.95
Battery case	FBA-15	*														$19.95
Battery case AA batteries	FBA-17				*				*			*				$25.95
Battery case AA batteries	FBA-20													*		$22.95
Cloning Cable	CT-27	*														$10.95
Radio case	CSC-V10	*														$35.95
Radio case FNB-11	CSC-38								*							$19.95
Radio Case FNB-25	CSC-50									*	*					$22.95
Radio Case FNB-26/27	CSC-52									*	*					$19.95
Radio case FNB-25/FBA1	CSC-53					*										$22.95
Radio case FNB-26/27	CSC-55					*										$22.95
Radio Case FNB-25	CSC-56												*			$22.95
Radio case FNB-26/27	CSC-58												*			$17.95
Radio case FNB-41/FBA-	CSC-68	*														$16.95
Radio case FNB-40	CSC-69	*														$16.95

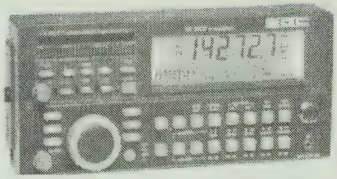
NC-50 Charger Adapters

Model	Batteries Supported	HRO Price
CA-7	FNB-12/14/17	$27.95
CA-8	FNB-25/26/27	$27.95
CA-10	FNB-31/33/38	$14.95
CA-14	FNB-40/41/42	$25.95

The NC-50 quick battery charger supports most Yaesu hand-held batteries. An appropriate adapter will be required. The adapters and batteries supported are shown in the adjacent table.

Look for Ham Radio Outlet on the Web
http://www.hamradio.com
NEW!
email: sales@hamradio.com

HF Transceivers



HRO Discount Price $1799.95

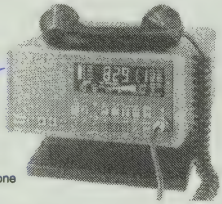
SG-2000ADSP
$1995.95
Suggested List Price

The PowerTalk™ SG-2000 packs advanced ADSP and SNS technology into a slim, state-of-the-art, control head. PowerTalk™ greatly increases signal clarity and drastically reduces noise, providing unsurpassed signal quality on the HF bands. You'll hear more and do more with SGC's precision tuning features. Bright red and green LED's provides precise visual tuning of high, low, and center frequencies. Preset and user-programmable memories allow quick recall of ADSP, SNS, and high, low, center, and notch filter settings for easy operation. A high performance spinner knob gives you hands-on tuning.

PowerTalk™ features 644 ITU and ham frequencies including SITOR / AMTOR / PAKTOR telex channels permanently etched into memory, plus 100 user-programmable frequencies and easy Weatherfax connections. It has 150 watts of power, an extra-large, extra-bright LCD display, and the latest surface mount technology. PowerTalk™ is a no compromise HF-SSB power tool. **Note: This radio must be special ordered.**

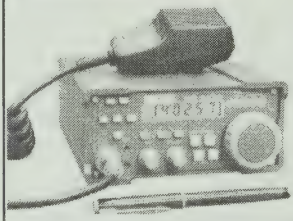
HRO Discount Price $1499.95

SG-2000
$1695.95
Suggested List Price



Pictured with Optional Handset Microphone

The SG-2000 is a rugged commercial grade all-mode HF transceiver that provides 150 watts PEP output. 100 user defined channels can be set to ham frequencies. The transmit frequency range is 1.8 to 30 MHz; receive range is 500 kHz to 30 MHz. The SG-2000 can be fully controlled by any standard RS-232 protocol connector. This allows easy implementation of all digital modes. The front panel can be removed to act as a remote head for mobile operation For more information on this HF transceiver, contact HRO. **Note: This radio must be special ordered.**



SG-2020
$595.95
HRO Discount Price

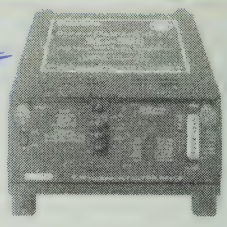
NEW!

The SG-2020 is a compact, low power transceiver with the features and performance of a modern, full-size transceiver. It covers 160 though 10 meters and has a general coverage receiver from 1.8 to 30 MHz. The power output is front panel adjustable from 0 to 20 watts PEP. The rig has RF speech processing, 20 memories, LSB/USB, break-in CW, built-in mode 'B' lambic Keyer adjustable from 5 to 60 WPM and memory scan.

HF Amplifier

HRO Discount Price $1099.95

SG-500
$1195.95
Suggested List Price



The SmartPowerCube produces tremendous power–nearly as much as a 1 KW amplifier–yet it requires less than one cubic foot of space. Electronic brain power makes it possible. The SG-500 is an intelligent, microprocessor controlled, high-powered linear amplifier, designed with high efficiency transistors. It constantly monitors your HF-SSB's activities, power needs, and antenna condition, and automatically–in less than 15 milliseconds–selects the right broadband filter. It can reliably produce, essentially unattended, in the most demanding conditions. Power supply required. SGC PS50 recommended to guarantee specifications. **Now available in export or domestic version.**

- Fully automatic band switching, 12 VDC.
- Input overdrive, over temperature, over current protection.
- Frequency coverage 1.8-24 MHz.
- Power output
  SSB: 500 watts PEP
  CW: 500 watts for 10 minutes; 500 watts continuous with fan
  AM: 250 watts carrier maximum

Digital Signal Processor

HRO Discount Price $309.95

PowerClear™
$395.95
Suggested List Price

Use the PowerClear™ control unit for enhanced signal clarity with any HF SSB rig. PowerClear™ is packed with advanced ADSP and SNS technology to greatly increase signal clarity and drastically reduce noise, providing unsurpassed audio signal quality. The listener will hear a remarkable improvement in SSB audio and increased intelligibility of signals.

PowerClear™ cuts out unwanted reception and interference from adjacent stations, allowing clear audio recovery. SNS digital circuitry analyzes the desired audio and undesired noise and automatically reduces the background roar. On digital signals, it automatically strips away interference. The unit has audio and visual fine tuning for swift interception of weak signals and 8 preset and 7 user programmable ADSP memories. The PowerClear™ can also serve as a preamplifier.

HF-SSB Automatic Antenna Couplers

SMARTUNER®

HF-SSB
Antenna Coupler SG-230

$550.95
Suggested List Price

SGC's Smartuner HF antenna coupler combines fully-computerized operation with a wide range of antenna matching possibilities. It is a versatile, clever, automatic device with quite surprising capabilities even on random wires. The Smartuner works with any HF rig.

- Tunes itself on an SSB signal. It does not need a constant carrier.
- Matches antennas from 2.5 to 27 meters long. A minimum length of 8 meters (25 feet) is required for 160 meter operation.
- Operates continuously from 1.8 to 30 MHz.
- Memorizes tuning which has already been done. There are 500 memory spots.
- The perfect addition to your marine-mobile installation.
- Tunes unknown antennas in just two seconds.
- Tunes a known antenna in milliseconds.
- Needs no bandswitching information, special low power tune-up or special wiring.
- 10 to 150 watts input power.
- Input impedance range is 45 to 55 ohms.
- DC operating voltage range is 10 to 15 VDC .9 amps.

DC Coaxial Line Isolator SG-54-70

$89.95 for Two
HRO Discount Price

These devices allow up to 25 VDC @ 1.5 Amp to be supplied more than 150 feet via the RF transmission line. Instead of running a separate power cable, use the coax to provide DC power to antenna couplers, antenna switches, pre-amplifiers, or other DC powered equipment at the antenna end of the line. Two isolators required per installation. Broadband isolators provides better than 80 Db isolation for 1.5 MHz through 30 MHz, better 40 Db through 250 MHz.

SMARTPRO®

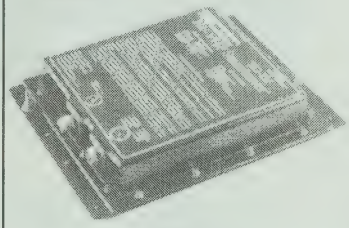
Enhanced HF-SSB Automatic Antenna Coupler for all Modes

$899.95
HRO Discount Price

The SmartPro® automatic antenna coupler does everything the world-proven Smartuner® does so well, but even better.

At its heart is the SG-230 tuner, with some significant enhancements including advanced tuning software and a more powerful and much faster microprocessor.

- Silent and manual tuning of complete networks via RS-232 and desktop/laptop PC computers with SGC Microtune™ software.
- Receiver pre-amp with 12 dB gain and remote control on-off.
- Free Smartlock™ and control software.
- Active, tunable antenna amplifier for RX-only purposes.
- 170 non-volatile memory positions.
- Smartlock® Pro included.
- Built-In-Test-Equipment (BITE) indicators.



SG-231 Antenna Coupler

$529.95
HRO Discount Price

The SG-231is a fully automatic coupler for 100 watts for 1.0 to 60 MHz. It uses a microprocessor controlled pi or L network to match most any load to your rig with the SWR always 1:1.5 or better. Tuning solutions are stored in non-volatile memory for fast automatic recall. Operates from 3 to 100 watts and required 12VDC.

SG-235

$1595
Suggested List Price

The SG-235 is a fully automatic coupler for 500 watts that will tune an antenna at least 23 feet long for the HF bands. The SG-235 automatically evaluates and switches 64 input and 32 output capacitor combinations plus 256 inductance combinations in a pi network design. The tuner remembers the chosen frequency and tuning values and automatically reselects those values when transmitting on that frequency. Powerful in combination with the SG-500.

QMS-7

Antenna Coupler System

$1299.95
HRO Discount Privce

NEW!

The QMS-7 is an HF antenna tuner system that can be strapped to the side of your vehicle.

The package includes an SGC SG-231 automatic antenna coupler, an SGC-307 extended full range antenna, and the special exterior, waterproof, mounting package.

Mounting the coupler and antenna outside the vehicle reduces engine noise, interference and eliminates feed loss. It can be quickly installed and easily moved from vehicle to vehicle.

The SG-231 Smarttuner is the working brain of the QMS-7 system. It automatically tunes just about any antenna (7' minimum) from 3 to 100 watts and from 1 to 60 MHz.

The SG-307 is a durable, lightweight antenna designed for mobile applications. It is a single fiberglass whip, helically wound, with primary resonance at 8 MHz and secondary at 25 MHz.

HF TRANSCEIVERS

10m Mobiles

RANGER Communications, Inc.

Choose from two Ranger 10 meter amateur transceivers: the 25-watt RCI-2950 or the 100-watt RCI-2970.

RCI-2950

$449.95

Suggested List Price
Call for HRO Discount Price

Ranger's RCI-2950 is built for reliability providing a wealth of features. It has full 10 m band coverage and all-mode communications. The ten most used frequencies can be pre-programmed for easy access.

- Full band coverage 28.0 - 29.6999 MHz.
- All mode (USB, LSB, CW, AM, FM).
- Large, easy-to-read backlit LCD display with four-step brightness control.
- Tuning steps 100 Hz; 1, 10, & 100 kHz; 1 MHz.
- CTCSS encoder / decoder (optional).
- Repeater offset switch with standard offsets.
- Built-in dual VFO.
- RIT for fine tuning up to ±3 kHz.
- Noise blanker.
- Selectable programmable tone.
- Transmitter output of 25 W for SSB, 12 W CW and 8 W AM / FM.
- RF gain control and RF power selector.
- Receive sensitivity AM 0.5 µV, SSB .15 µV, FM .25 µV.

RCI-2970

$599.95

Suggested List Price
Call for HRO Discount Price

This 10 meter HF transceiver has similar performance and features to the RCI-2950 except it provides **100** watts PEP output.

HF + 6 Meters

JRC

JST-245

$2399.95

HRO Price

The JST-245 HF transceiver covers the amateur HF bands plus 6 meters. It is compact and includes a switching AC power supply and an automatic antenna tuner. It features variable tuning, multiple antenna selection, dual IF filters, variable bandwidth control and notch tracking. There is a full coverage receiver for 100kHz to 54 MHz. Modes include SSB, CW, AM, FM and AFSK. Output is 15 to 150 watts continuously variable. CW operations are full break-in and an electronic keyer is included. There are 200 memory channels to store frequency, split, mode, filter, AGC, antenna, shift, tone. All mode squelch, VOX and RF speech processor included.

Speaker

ALPHA DELTA

Model VRC

Variable Response Console

The VRC is a tuner-port speaker with a built-in audio equalizer plus peak and notch filters to improve radio audio response. It has a 4-inch speaker, a tuned baffle, and is constructed of heavy cast aluminum. A VRC-2 is available with the tuner port speaker and no electronics. With 13.8 VDC powering the VRC, up to 5 watts output can be obtained.

HRO Prices: VRC 5 watt $229.95
VRC-2Passive $99.95

Computer Control

KACHINA

505DSP

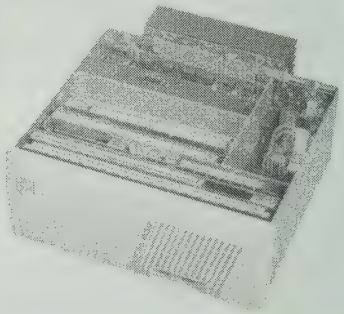
$1899.95

505DSP/AT

$2134.95

HRO Prices

Most hams already have the ultimate radio controller in their shack–the personal computer. The 505DSP greatly simplifies radio operation. On screen help menus get you started and keep you going. Most functions are intuitive with drop-down menus and hot keys. The system is 100 percent PC controlled under Windows 3.1 or Windows 95. All amateur HF bands are covered with a general coverage receiver (0.1 to 30 MHz). USB, LSB, CW and AM modes are included. Requires 13.8 VDC at 25 amps maximum for transmit. SSB sensitivity is 0.18 µV. Transmitter output is 100 watts SSB / CW and 25 watts AM. Other features include an IF stage with 16/24 bit DSP processing, 1Hz DDS tuning, built-in test and frequency calibration, band sweep display with point and click transceiver tuning, on screen antenna Smith chart, and logging software. 505DSP/AT model includes an automatic antenna tuner.



HRO Accepts

VISA MasterCard DISCOVER

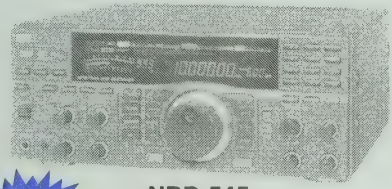
HF Receivers

JRC

NRD-345
$849.95
HRO Price

The NRD-345 HF receiver was developed for BCL and SWL fans who want to enjoy the world's broadcast programs and shortwave communications with sound clarity under good, interference-free air conditions. In shortwave propagation, however, there is a typical phenomenon call fading. To solve this, the NRD-345 incorporates an AM synchronous detection circuit to produce a constant level of regenerative carrier synchronized with the received carrier in phase and frequency. The receiver is a compact, lightweight, refined design and offers advanced multifunctions.

- Frequency range 0.1 to 30 MHz.
- Modes: AM, SAM, CW, SSB, FAX.
- 100 memory channels.
- 12 VDC at 0.8 amp.
- AM synchronous detection.
- Noise blanker.
- Uses one-chip DSS-IC.
- High sensitivity and wide dynamic range.
- Clock/timer function.
- Computer control.
- Multiple memory and frequency scanning.



NEW!

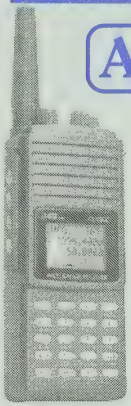
NRD-545
$TBA
HRO Price

The NRD-545 HF receiver provides the reproduction of clear, distortion free sound through the application of 40-bit digital signal processing (DSP). 13 type of circuits are now handled by the DSP unit to include all mode detection, IF filter, pas band shift, noise reduction, beat canceller, noise blanker, notch filter, AGC, BFO, RF Gain, squelch, tone control and s-meter. Features a variable tuning system, high sensitivity, wide dynamic range RTTY demodulation, large LCD display, remote control by a personal computer. The NRD-545 covers .01 to 30 MHz and 30 MHz to 200 MHz with the optional board. Covers all modes with outstanding sensitivity.

NOTICE: The NRD-545 has not been approved by the Federal Communications Commission. This device is not and may not be offered for sale or lease until the approval of the FCC has been obtained.

Shortwave Listening

AOR



AR8000B
All-Mode Receiver

$599.95
HRO
Discount Price

AOR has produced a new breed of receiver which combines full computer compatibility with advanced wide-band radio receiver technology.

The AR8000B is simple to operate and comes with a compete, descriptive operating manual. It can be connected to an external computer for remote control. The receiver covers 500 kHz to 1900 MHz continuous (cellular phone band blocked). Step size is programmable in 50 Hz increments for smooth tuning. All mode reception is provided for AM, USB, LSB, CW, NFM and WFM. An independent 4.0 kHz SSB filter is included.

The LCD is a new dot matrix design. It has four lines and may display signal strength and a band scope showing band occupancy. Two VFO frequencies may be displayed simultaneously, one with a standby frequency for quick transitions. Alphanumeric comments may be stored along with frequency, mode and attenuator status.

Feature 1000 memory channels divided into 20 banks of 50 channels each. Special frequencies may be entered in the memories and recalled only after entering a "password." The AR8000 will search and scan at a speed of 30 increments per second.

YAESU

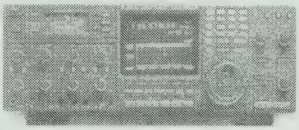
FRG-100B
$599.95
HRO Price

Yaesu's high performance receiver provides general coverage in CW, SSB, AM and FM modes from 50 kHz to 30 MHz.

- Selectable standard tuning steps plus user-programmable steps.
- LCD display with 10 Hz read-out.
- Broadcast band selection mode.
- 50 tunable memory channels.
- Multi-function scanning.
- Adjustable BFO with selectable CW sideband.
- Optional FM unit and CW filters.

ICOM

R-9000
$7508.00
HRO Price



Notice: Federal and State Government Agencies and Communications Customers Only

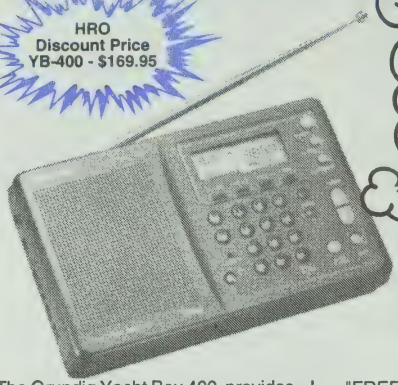
Icom's top-of-the-line receives 100 kHz to 1999.8 MHz*. Eleven bandpass filters use GaAsFETs for the VHF and UHF bands. Modes include: LSB, USB, CW, AM, FM, WFM (wide-FM) and FSK. The receiver has a multifunctional CRT display with spectrum scope to provide information on the status of the radio as well as incoming signals. It shows contents of the memories, dual clocks, weekly and daily timers, and frequencies of the dual VFO's. Dynamic range is 60 dB and sensitivity is approximately 1µV.

GRUNDIG

SWL RECEIVERS

HRO Discount Price YB-400 - $169.95

Free AC Power Adapter with purchase of YB-400. Limited time offer. A $19.95 value FREE.



Yacht Boy 400

$269.95

Suggested List Price

The Grundig Yacht Boy 400 provides continuous coverage from 1.6 to 30 MHz in a compact package. It receives single sideband signals from amateur radio as well as military and commercial air-to-ground and ship-to-shore. It is excellent for the beginner to the advanced listener, especially for users needing a small radio with full features.

- Shortwave, AM and FM modes from 1.6 to 30 MHz. No tuning gaps allows all frequencies to be monitored including shortwave, AM, longwave and FM Stereo.
- 40 randomly programmable memory presets allow for quick access to favorite stations. The memory "FREE" feature automatically shows which memories are unoccupied and ready to program.
- The LCD multifunction display simultaneously shows the time, frequency, band, automatic turn-on, and sleep timer.
- Clock, alarm and timer features provide dual alarm modes (beeper and radio). Dual clocks show time in 24 hour format. The sleep timer is programmable in 15 minute increments to 60 minutes.
- Enter frequencies directly by using the front panel key pad and the radio will automatically select the correct band.

HRO Discount Price YB-305 - $129.95

Yacht Boy 305

$159.95

Suggested List Price

The Grundig Yacht Boy 305 is designed for those SWL listeners on a budget who are not interested in SSB and do not require an alarm or clock.

Model 305 provides continuous coverage from 2300 to 21850 kHz and utilizes the Grundig digital and phase locked-looped technology. It covers all existing SW bands plus FM stereo and medium wave.

There is a large cavity speaker enclosure for rich sound and 30 preset memories for building your own library of stations. The YB-305 features direct entry digital tuning, auto-scan and up or down slewing, telescoping antenna for FM and SW, a built-in ferrite core antenna for AM, external antenna socket, LED tuning indicator and tone control. Requires 2 C-cell batteries (not included). AC adapter is optional.

SANGEAN

ATS-909

$239.95

HRO Discount Price

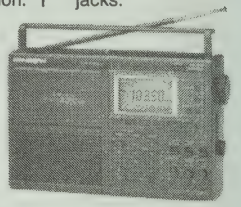
Sangean's ATS-909 is a full featured, portable SWL receiver.

- 306 memories: 261 SW, 18 MW, 18 FM, 9 LW.
- 5 tuning methods.
- ATS Auto Tuning System.
- SSB (LSB and USB) with 40 Hz tuning steps.
- Wide / narrow filter.
- Auto SW Search.
- Direct key to recall your favorite station.
- Manual editing to insert 8 alpha-numeric characters on the display.
- 3 individual timers.
- Mono / stereo selector switch.
- PLL dual conversion receiver with tone control.
- Separate audio recorder output and standby control jacks.

ATS-818CS

$219.95

HRO Price



Sangean's portable world band receiver with built-in cassette recorder offers more features and performance than many other table-top short wave receivers.

- Covers all SW bands from 120 m to 11 m.
- Covers FM broadcast band.
- RF gain control.
- Has BFO for receiving SSB and CW.
- Memories store your favorite frequencies.
- Dual time display and clock alarm.

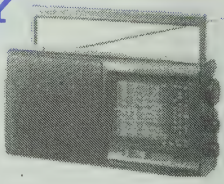
Emergency Radio

SONY

Emergency Radio ICF-SW600

$59.95

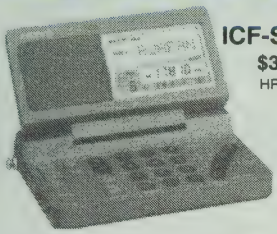
HRO Price



Sony's user friendly Emergency Radio for the novice user is a 12-band receiver with tone control, an LED tuning indicator, built-in transformer, portable AC/DC operation and a 4-inch speaker.

SONY

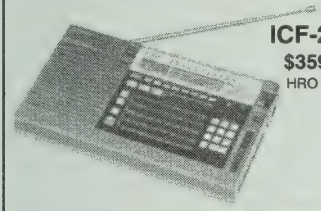
SWL RECEIVERS



ICF-SW100S
$349.95
HRO Price

The heart of this world-band radio system is a multi-band receiver the size of a cassette case. It weighs only 8 ounces with batteries. The kit provided includes a carrying case, a separate active antenna, multi-voltage AC adapter and in-the-ear stereo headphones.

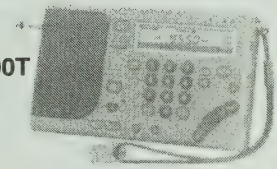
- Covers FM 76-108 MHz, 150 kHz to 29.995 MHz plus SSB.
- Access frequencies directly with key pad.
- 50 station memory presets.
- Band selector accesses SW bands.
- Auto-scan search; pauses for 1.5 seconds.
- LCD has 24 city name/time display.
- Built-in clock with alarm and sleep timer.
- Two position tone control.
- Requires 2 AA batteries (not supplied) or power from the AC adapter included.
- Jacks for an external speaker, external antenna and DC in (3 volts).



ICF-2010
$359.95
HRO Price

This popular portable SWL receiver is a super-compact world band radio that delivers fast direct access tuning with great accuracy.

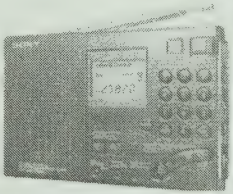
- AM coverage 150-29.999 MHz.
- FM broadcast band coverage.
- Dual PLL quartz frequency tuning provides stability and reduces drift.
- Built-in quartz clock and Sleep Timer with 15, 30 or 60 minute settings.
- Has BFO for receiving USB, LSB and CW.
- Instant recall of 32 station presets.
- Memory scan tuning samples preset stations.
- Automatic band scan gives a sample of each station on the selected band.
- Switchable IF bandwidth has narrow mode.
- Comes with the AC-DC adapter.
- The clock requires 2 AA batteries (not included). **These must be installed for the radio to work.**



ICF-SW1000T
$429.95
HRO Price

This world band radio has a built-in cassette player / recorder with auto reverse, auto tape select and a feather-touch mechanism. It has timer record capability with cue and review. The built-in clock also has alarm and sleep functions.

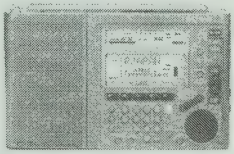
- SSB, FM stereo, AM (LW/MW/SW)
- 10-key direct access tuning.
- 1 kHz step tuning.
- 32 station memory presets.
- Dual standby.
- The detector circuitry is synchronous.



ICF-SW7600G
$199.95
HRO Price

Travelers love this versatile World Band Radio® receiver with stereo FM reception and instant access to all channels and bands. The built-in clock timer has sleep and stand by functions.

- AM (LW, MW, SW) / FM stereo reception
- Dual-conversion superheterodyne circuitry
- 10-key Direct Access™ tuning.
- PLL quartz synthesis tuning gives accurate, drift-free frequency selection.
- SSB circuitry for reception of voice and Morse code (CW) on amateur bands.
- Manual and automatic scan tuning.
- The display is liquid crystal (LCD).
- Antennas include a built-in ferrite bar for MW and LW and a telescoping whip.
- A jack provides easy antenna connection.
- A 3" speaker and high / low tone provides a wide range of sound for music or news.
- Requires 4 AA batteries (not included) or the optional worldwide AC adapter.



ICF-SW77
$449.95
HRO Price

The ICF-SW77 is the step-up model of the popular ICF-2010. It has provisions for 150 station memory presets to find your favorite station quickly. For better tuning, the ICF-SW77 has 50 Hz tuning resolution. Enter the name of a station and it will display when the particular memory is selected.

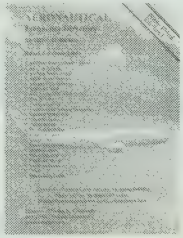
SWL Books

World Radio TV Handbook

Complete source-book for 1000+ English broadcasts. Stations listed by country and frequency. Pages of advice, tips, Internet addresses. 1998 edition. **HRO Price: $24.95**

Passport toWorld Band Radio

News and shows from 160 countries. Reviews and advice on how to get started listening to international radio. 1998 edition. **HRO Price: $19.95**



Aeronautical Frequency Directory

Covers military and civilian flying in the continental U.S. Has statewide and national systems, CAP, community frequencies, and air carrier designators. Lists towers, departure, ground, enroute, emergency frequencies, and more. Third edition. **HRO Price: $21.95**

SWL ANTENNAS

SWL Antennas

DYMEK
DA100E
The World's Most Respected Short-Wave Active Antenna

Frequency Coverage: 50 kHz to 30 MHz, continuous.
Height: 4 feet 8" (142cm).
Output Impedance: Switch select 50, 100, or 500 ohms.
Attenuation: Switch selectable 0,10, 20 dB.
Power Required: 110-120 or 220-240 VAC switch selectable, 50-60 Hz, 4 watts, or 12 VDC 0.4 Amp.
Dimensions: Antenna Module: 3.75"W x 4.375"H x 2"D (9.5 x 11 x 5cm).
Power Supply: 6.5"W x 3"H x 7.5"D (16.5 x 7.6 x 19cm).
Shipping weight: 9 lbs (4.1 kg).
HRO Price $179.95

Antenna Supermarket
SWL Sloper

The Sloper covers SWL bands from 11-120 meters. Automatic band switching. SO-239 connector for attaching coaxial cable. **HRO Price $79.95**

Eavesdropper™

This high performance trapped dipole for the 11-60 meter SWL bands is 42 feet long. Twin lead or coax models are available. **HRO Price $79.95**

SONY
AN-1
Active Antenna

For the SW listener with space problems, the AN-1 has a frequency range of 150 kHz to 30 MHz. Has a low noise FET in the built-in preamp. Built-in attenuator. Requires 6 AA batteries or AC-12 adapter. Antenna can be used inside or outside. Comes with 39 feet of cable. **HRO Price $99.95**

B&W
SWL Antenna
ASW-90
HRO Price $98.95

- 0.5 - 30 MHz in only 90 feet.
- Very low noise.
- No antenna tuner required.
- SWR less than 2:1 from 0.5-30 MHz.
- 50 Ohm input with SO-239.
- Comes completely assembled.
- Install as flat, inverted vee, or sloper.

Long Wire Antenna Kit
ASW-100

Complete kit includes 100 feet of #14 Copperweld wire, 50 feet lead-in wire, insulators and 25 feet of rope. Easy to set up. **HRO Price $42.95**

SOFTWARE STUDY AIDS

License Studies

W5YI
Ham Operator Education Software

Use you IBM or compatible to study and review No-Code through Extra Class License material. The package includes nine diskettes covering all theory and Morse code for all Ham licenses. Includes both 3.5" and 5.25" diskettes. Requires 256K and DOS 2.11 or later. **HRO Price $39.95**

General Radiotelephone Operator

Pass your GROL fast with computer aided instruction. Complete with 495 page fully illustrated manual. Take sample tests right at your PC, or print them out. Requires 3.5" drive, 256K and DOS 3.2 or better. For IBM PCs or compatibles. **HRO Price $59.95**

AMECO
Exam Preparation Software

Learning software is now available for PC compatible computer systems. Instructional packages are available for all licence classes, Novice through Extra.

Prepare for the written exams using your own computer. All possible exam questions are covered word for word as they will appear on the actual exam.

The software includes: user-friendly interface, mouse support, colorful graphs, all required schematic diagrams, and full time on-line help. The software quizzes you on every topic and a sample VEC test can be seen on the screen or printed.

An Ameco FCC Test Manual is included as part of every Test Package. Call for the HRO Price on the Test Packages.

Morse Code

GGTE
Morse Tutor GOLD

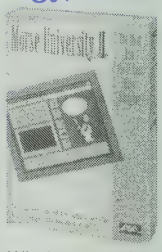
Morse Tutor Gold software for the IBM PC / XT / AT and compatibles comes on 3.5" or 5.25" disks.

The eleven menu-driven lessons use a flash card technique to teach Morse code. Each session can be set up to teach only the specific lesson, a random character drill, or a random word drill using only those characters already learned. The last lesson is a random QSO generator based on a large information pool. This lesson is similar to code exams.

The program does standard or Farnsworth CW spacing. You may enter your own text from the keyboard or import ASCII files. The character tally is also shown.
HRO Price $29.95

Timewave Technology, Inc

Morse University II™



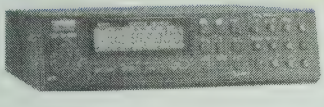
$39.95
HRO Price

This multimedia Windows product makes Morse Code practice fun. Start by learning the characters, numbers, and punctuation. Raise the speed as your ability increases. Practice copying real-world QSO's using the exercise feature. Use the built-in QSO's or send you own text file.

- FCC quiz section helps you focus on troublesome areas.
- FCC exam section gives you practice tests.
- Great for schools and clubs.
- Pentode™ game improves code speed.
- Requires PC compatible computer (386 or better), Windows 3.1 or Windows 95, 1.44 MB floppy, 2 MB of hard drive space, 4 MB RAM, VGA display, mouse, and sound card for Pentode game.

unlden®

Mobile Scanner



BC-760XLT
$229.95
HRO Price

This mobile scanner includes 800 MHz coverage except for cellular.
- 100 programmable channels organized in 5 scanning bands of 20 channels.
- Auto scanning of prepro-grammed marine, police, aircraft, and emergency services.
- Weather search, priority, squelch, lock-out and delay.

Handheld Scanners

BC-3000XLT
$379.95
HRO Price

The continuous band coverage 3000XLT has 400 channels. It covers 25 to 550 MHz and 760 to 1300 MHz (except cellular bands). It has Turbo Scan and Search; 10 priority channels; AM, NFM and WFM modes; selectable attenuator, data skip, automatic store and sorting; flexible antenna; and rechargeable battery.

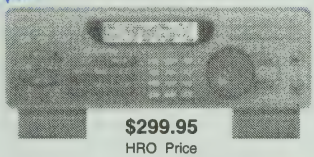
BC-230XLT
$239.95
HRO Discount Price

The compact 230-XLT has 200 channels in 12 bands including aircraft (800 MHz blocked). It features twin turbo scan and search, programmed SVC search, unique skip data, and manual channel access. It has a LCD frequency display, one touch, and a rechargeable NiCad battery.

Trunk Trackers

NEW!

BC-895XLT
Mobile / Base



$299.95
HRO Price

The BC-895XLT is the industry's first trunk tracking base scanner. Search and monitor all the groups within a trunked system. Has 300 channels and includes 12 bands with aircraft, weather, and built-in CTCSS. Includes a RS232 port for compuer control.

BC-235XLT
Handheld
$299.95
HRO Price

This fully programmable 800 MHz trunk-tracking handheld scanner has 300 channels (10 priority) to program, 12 bands in 10 banks including aircraft and 800 MHz (cellular frequencies blocked). Pre-programmed service search allow you to toggle through police, fire, emergency, aircraft, marine and weather frequencies. Trunk scan and scan lists search for activity on one trunk or create lists of multiple groups to scan (e.g., fire or police). Trunk search monitors all groups within a trunked system. The LCD display shows the channels being scanned and the frequency for each. Includes two rechargeable NiCad battery packs and CRX120 battery charger.

Base Units

BC-9000XLT

$399.95
HRO Price

The 9000XLT provides 500 channels with continuous band coverage. It receives 25 to 550 MHz and 760 to 1300 MHz (except cellular bands). It has Turbo Scan and Search; 10 priority channels; AM, NFM and WFM modes; selectable attenuator, data skip, automatic store and sorting; automatic control tape ON/OFF, and tape output.

SONY

NEW!

ICF-SC1
$279.95
HRO Price

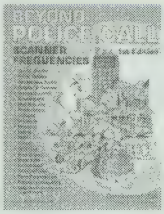
ICF-SC1PC
$349.95
HRO Price

Handheld Radio Frequency Scanner

Sony's scanner covers all frequencies allowed by the FCC between 35 MHz and 1,300 MHz (cellular band blocked). This includes 9 bands: police, aircraft, fire/emergency, weather, marine, FM and TV frequencies. AM/Narrow and FM/Wide reception is provided. There are 300 memory channels for storing your favorite frequencies.

The ICF-SC1PC model has a bi-directional PC interface with search and control capabilities. It includes a CD-ROM which lists all frequencies in the U.S. Use this CD-ROM with the PC interface to search and create files by a variety of search modes.

Scanner Books



Beyond Police Call

Scanner frequencies for all those other uses: sports events, amusement parks, newspapers, mall security, movie crews, hospitals, taxis, conventions, farm cooperatives, private investigators, public utilities, hotels, and much more. First edition. **HRO Price: $9.95**

Call HRO for more scanner books.

GARMIN

GLOBAL POSITIONING

Garmin's Personal Navigator GPS receivers are low-cost and full-featured. This family of satellite navigation equipment can guide you anywhere you want to go.

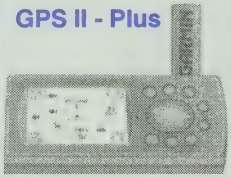
GPS 45XL

The smallest GPS in the industry has a convenient rocker switch keypad for simple operation. Take a fix, plot a course, or plan a route on the moving map display.

MultiTrac8™ uses up to 8 satellites for fast and accurate positioning. The large, backlit LCD display has graphic plotting and fonts with easy-to-read characters. There are 11 different grid and position formats. Graphic presentation pages for satellite status, position, compass, moving map plotting and CDI navigation provide user-friendly guidance for intuitive operation. The 45XL weighs only 9 ounces.

HRO Price: $269.95

GPS II - Plus



The GPS-II is designed with over-the-road and off road adventures in mind. Features a state-of-the-art two-way screen display for vertical or horizontal orientation. Has an external antenna for improved reception, dedicated zoom keys, diagonal paning, auto start/stop trip timer and average and maximum speed recordings.

- MultiTrac8™ operating system continuously tracks and uses up to 8 satellites.
- Rocker keypad, backlit LCD display, full featured moving map plotting.
- EZinit feature for fast "point-and-shoot" initialization.
- Dedicated keys for zooming from 0.2 to 360 miles.
- User selectable navigation screens for compass or graphic highway steering guidance.

HRO Price: $249.95

GPS 12XL

This GPS has a 12 channel receiver for fast, accurate positioning. It is designed for boaters, hunters and hikers who use a GPS in the most challenging environments.

- PhaseTrac12 parallel channel receiver for fast position fixes in tough conditions including urban obstructions and tree canopy.
- Rugged, compact case that meets military 810(e) specification.
- External antenna and internal beeper alarm.
- 500 user waypoints with alphanumeric name and user comments.
- 20 reversible routes of up to 30 waypoints each.
- TracBack navigation automatically turns your track log into a route back home.
- 9 proximity waypoint alarms
- Over 1000 track log points, position averaging, emergency erase, and cloning features.
- Up to 12 hours battery life on four AA batteries (not supplied).

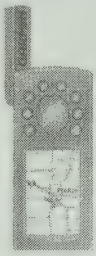
HRO Price: $229.95

NEW! StreetPilot

The StreetPilot GPS combines satellite tracking technology with detailed electronic maps to bring Garmin navigation to your automobile. The StreetPilot contains a world reference map and shows Interstate, US and state highways plus rivers and lakes in the US, Canada, and Mexico. Commonly-used streets are shown in metro areas. Plug in an optional data card and enjoy street-level map detail. Enter an address and the unit will find it on the map. Also a long list of hotels, restaurants, shops and other points of interest are shown.

HRO Price $549.99

GPS III



The most remarkable feature of the GPS III is its base map. Millions of miles of interstates, highways, railroads, rivers and shorelines are included for North, South and Central America.

The 12-parallel-channel receiver finds your position fast. Position averaging reduces the effects of Selective Availability. The GPS III tells you how far you are from a point and how long it will take you to arrive. It tracks your route and stores locations with names, icons and a brief description. With one keystroke, trip odometer and speed calculations are in clear view.

- High-contrast black/white LCD display with 3-level backlighting.
- Array of user-selectable icons enhance the map display.
- 500 user waypoints.
- Resettable trip odometers.
- Compass pointer screen.
- TracBack feature to quickly navigate your return home without manually storing waypoints.
- Meets IPX-7 waterproof standard.
- Gives sunrise and sunset times.
- Weighs only 9 ounces.

HRO Price: $369.95

Garmin Accessories

Description	GPS II	GPS 12XL	GPS 38	GPS 45XL	HRO Price
GA28 Low Profile remote marine antenna with 30' cable/ BNC	*	*	*	*	$99.95
GA26 Low Profile antenna, magnetic and suction mounts, 8' cable, BNC	*			*	$99.95
GA27 Low Profile remote antenna, magnetic and suction mounts, 8' cable, MCX connector		*			$99.95
Mounting Bracket		*	*	*	$31.95
Power/Data Cable	*	*		*	$27.95
Cigarette lighter adapter	*	*		*	$23.95
PC interface cable	*	*	*	*	$38.95
PC interface cable w/cigarette lighter adapter	*	*		*	$45.95
PC4X navigation software and cable kit	*	*	*	*	$99.95

MAGELLAN

Satellite Navigation and Communications

Global Satellite Communicator

GSC-100

Call for Your Low HRO Discount Price

Stay in touch no matter where on earth you go. Send and receive e-mail from the most remote places. With its integrated GPS, you can navigate with assurance and relay your position to anyone, anywhere. Estimated delivery late October 1997.

With an easy-to-use, menu-driven interface, the GSC-100 allows you to send and receive messages through the ORBCOMM network, a wireless, two-way satellite system with global coverage. The GSC-100 communicates with the satellites on a standard narrow-band VHF frequency. Your e-mail is routed through a Gateway Station and on to its final destination via traditional methods.* Create, edit, forward, and store up to 100 text messages. The address book takes up to 150 entries.

The integrated global positioning system helps you identify your position, plot and track your course, or store 200 waypoints. Store five reversible routes of 15 legs. Features six graphic navigation displays.

Rechargeable NiCad battery pack included as well as an AC adapter for 10-35 VDC. Includes ORBCOMM telescoping and GPS internal patch antennas.

*Additional cost for satellite time. Call for more information.

World Phone

Satellite Telephone

$3999.95

Marine Version

$6999.95

HRO Prices

Magellan now offers two satellite telephone product based upon the revolutionary mini-M service from Inmar-sat.

Advanced Mini-M technology allows the size, weight, and cost of the phones to be significantly reduced. The phone will provide global voice, fax, and data communications with airtime charges of just $2.99 per minute.

The Magellan mini-M phone includes the phone, internal battery, waterproof remotable antenna, and AC converter/charger. The phone will be fully capable of voice, fax, and data communications without any additional costs or upgrades.

The Marine Version is a compact unit that mounts easily in the boats cabin and includes the topside-mounted auto-tracking antenna

Radio Protectors

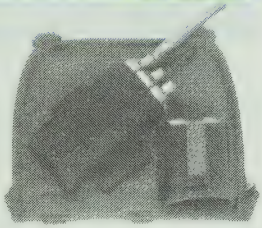
The Pouch

10th Anniversary!!

Secure Shock Absorber

New design water resistant carrying cases are made of bouncy, tough neoprene and nylon. A bungee type parachute cord restraining strap secures the HT. Has a durable quick-release clasp on a web belt loop.

Models	HRO Prices
10T/ 50R	$14.95
508b, S-510	$14.95
All Others	$17.95



ChestPOUCH

You get "hands-free" security with the ChestPOUCH. Double-ply black cordura. Neoprene pouches for radio and battery holders. Adjustable harness attaches to bib. Pen and penlight holders, big back pocket for maps, manual. Specify ANY radio or Pouch model.

HRO Price $25.95

Contact your nearest HRO store for The Pouch to fit the latest handheld model.

Manufacturer	Radio Model	Pouch Model	Comments
ADI	AT-200/ 201/	T2	for 2.5 watt battery
	400/ 401/ 600	S1	for 5.0 watt battery
Alinco	DJ-G1T/G5T	P5	
	DJ-S11/S41T	P5	
	DJ-190/191T	Slim	
	DJ-582	S2	
Icom	IC-2GXAT	S1	
	IC-21/41A	P5	
	IC-T7A	P5	
	IC-T2A	T2A	
	IC-T22/42A	P5	
	IC-W32/Z1A	S2	
Kenwood	TH-22/42A	SS	for 3 watt battery
		Slim	for 5 watt battery
	TH-79A/D	S1	for 2.7 watt battery
	TH-79(HP)	S2	for high pwr battery
	G71A	G71	Exclusive pouch
	TH-235A/HP	S2	Reg of Hi-pwr battery
Standard	C-108/508	508	for all batteries
	C-156/168/178A	P5	
	C-510A	S-510	
	C-288A	Slim	
	C-568A	P5	
	C-628A	P5	
Yaesu	FT-10R/FT-50R	10R/50R	fits 2 & 5 watt batteries
	FT-11R/71R	P5	
	FT-51R/HP	SS	
	VX-1R	1R	
	VXF-1	P4-U	

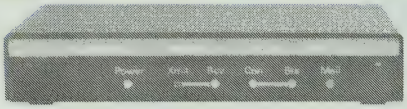
Kantronics

Packet and HF Modems

All TNCs (wireless modems) below now have Version 8.2 Firmware support, Advanced APRS digipeating, EMWIN for weather broadcasts, KISS mode, host mode, and support the attachment of a GPS for tracking. All ideal when configured as a GPS tracker with just a radio and a GPS. Special "HSP" cable available for configuring with WB4APR's "APRS" program.

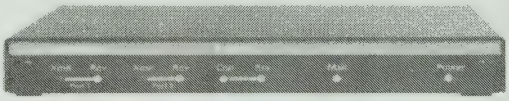
All modems can be supported by Pacterm '98, the new Kantronics Windows '95 software (optional). Units ship with Pacterm 2.0, a DOS starter program. Selected assembled radio cables are available; see web site for list.

For more details, see the Kantronics web page: www.kantronics.com



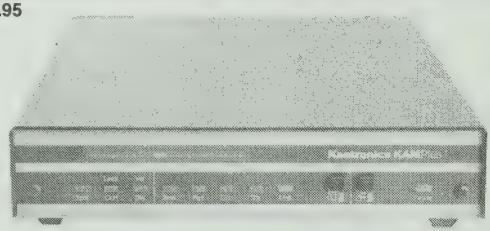
KPC-3 Plus – VHF / UHF TNC

Great for beginner and experienced alike. This low power, single-port TNC supports GPS, APRS, hostmode programs (Pacterm'98 for Windows'95), WEFAX, EMWIN, kiss mode for TCP/IP, and up to 512K or RAM store. Shipped with 128K RAM standard. **HRO Price $129.95**



KPC-9612 Plus
Dual-Speed, Dual-Port TNC

Same features as KPC-3 Plus but adds a high speed port for 4800 to 38400 baud packet. High speed port requires a "data" ready radio. **HRO Price $289.95**



KAM Plus
Dual Port HF / VHF TNC

The famous KAM Plus! Same as KPC-3 Plus but also adds the HF modes: CW, RTTY, Navtex, AMTOR, Pactor, G-TOR, and ship-shore e-mail FREE SIGNAL detection within AMTOR (for radio telex with shore services). **HRO Price $299.95**

KAM '98

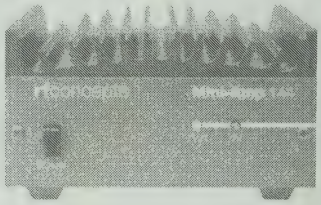
NEW!

Single-Port HF-VHF TNC. A single-port TNC supporting the same modes as the KAM Plus, and adds 1200 baud packet operation in the HF port plus two A/D inputs in an AUX port for telemetry operations. **HRO Price $TBA**

VHF / UHF Amps

rfconcepts

The mini-amps and maxi-amps have been redesigned. Both now feature directional coupler keying, not the old 1980s AC coupled keying design found in similarly priced amps. Both series also include solid-state preamps with 10> dB gain and separate switch control, new style heat sinks, flow soldered construction, and are MADE IN THE USA.



Mini-Amp 144P 2-meter HT amp features 1 to 6 watts in and gives 20 to 30 watts out.
HRO Price $129.95

Mini-AMP 440P 70-cm HT amp with 1 to 6 watts in. Two watts in gives 20 watts out.
HRO Price $159.95

MaxAmp 10 2-meter power amp has ten watts in and 160 watts out. Also features directional coupler VSWR and temperature protection.
HRO Price $329.95

MaxAmp 45 2-meter power amp features 40 watts in and 160 watts out. Also has directional coupler VSWR and temperature protection.
HRO Price $299.95

RFC-4-110 70-cm power amp features ten watts in and 100 watts out.
HRO Price $359.95

RFC-4-310 70-cm power amp features 30 watts in and 100 watts out. Includes a receive preamp.
HRO Price $349.95

Software

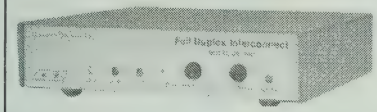
Pacterm '98

Windows '95 Comm Program for Kantronics TNCs. This program supports all of the TNCs listed above and follows Windows 95 style guidelines. A demo copy of this program may be downloaded from the Kantronics website. Password (tied to call sign) must be obtained directly from Kantronics after purchase at dealer to activate the HF portion. **HRO Price $69.95**

Software is sold on a non-returnable basis.
Any software problems will be resolved
under the terms of the manufacturer's warranty.

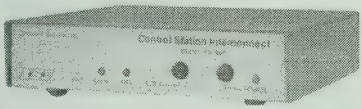
Telephone Interconnects

Connect Systems manufactures a wide range of telephone interconnects and commercial equipment. Please contact HRO or visit the CSI Worldwide Web page at http://www.connectsystems.com



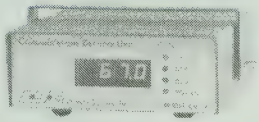
CS-800
Full Duplex Interconnect and Repeater Maker

This low cost automatic, full d-uplex patch converts your dual band base and dual band handheld or mobile into a cellular like duplex phone system. A built-in repeater maker can be enabled which makes the CS-800 suitable for private or club repeater/ auto patch use. The CS-800 comes with standard features unavailable in competing brands such as 90 memory speed dialer, redial, hookflash, CW ID, advanced toll restricts, secret toll override access code, built-in programming keypad and digital readout, tone / pulse dial out, and more. The only connections required are to the mike and speaker jacks of your rig. Fully FCC and DOC approved **HRO Price $349.95**



CS-900
Simplex Interconnect

This low cost automatic simplex patch converts your single band base and handheld or mobile into a powerful phone system. A 1/2 second digital voice delay prevents word clipping caused by transceiver and vox switching speed. It can be used base to mobile or through repeaters to extend range (phone-base-repeater-mobile and back mobile-repeater-base-phone). The CS-900 comes with many standard features unavailable in competing brands such as 90 memory speed dialer, redial, hookflash, CW ID, advanced toll restricts, 10 programmable toll override sequences, secret toll override access code, tone/pulse dialout and more. It can be user programmed using the built-in keypad with digital readout, over the air using DTMF, or from any telephone. The only connections required are to the mike and speaker jacks. Fully FCC and DOC approved. **HRO Price $349.95**



CD-2
Communications Decoder

The CD-2 decodes and displays 51 CTCSS tones and 112 DCS codes originating on the channel you are monitoring. DTMF tones are decoded and displayed as they occur and are replayed a second time slowly so that you can read high speed auto-dialers etc. The gimbol makes the CD-2 easy to mount in a vehicle so you can easily determine which CTCSS tone is needed for repeaters as you travel. The RS-232 port can transport all decoded data to a computer. **HRO Price $256.95**

CD-2P Software

The CD-2p DOS-based application stores the time and date of each decoded CTCSS, DCS or DTMF from your CD-2. Accumulated data can be displayed or printed. Graphical displays show channel loading and more. **HRO Price $109.95**

Phone Patches

YAESU

SP-767P

The SP-767P is the phone patch version of the popular SP-767 speaker. Cables are provided for connection to the current line of Yaesu HF radios. It does not include the audio filters of the SP-767 speaker. **HRO Price $139.95**

KENWOOD

PC1A

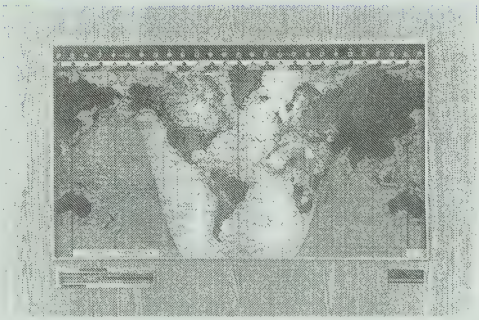
This phone patch is compatible with the Kenwood radio line and comes with an 8-wire cable for direct connection to the radio mike plug. The PC1A is FCC part 68 registered. It comes wired for Kenwood radios but may be used with others after proper changes in the connections. **HRO Price $129.95**

GEOCHRON Clock

Kilburg GEOCHRON Global Time Indicator

Dimensions:
34" x 22" x 5"

Suggested List Price:
$1495.95
Call for HRO Special

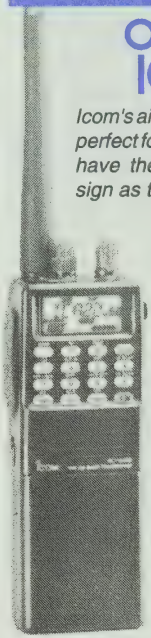


Geochron is a true global time indicator. At any moment, Geochron displays the correct time everywhere in the world. It shows day of the week, date, the sun's declination and distribution of daylight and darkness on the earth's surface. Geochron is available in four (4) models and a multitude of housing finishes and trim colors. Packaged for "drop shipment" anywhere in the world via UPS or DHL. Geochron can be surface mounted on the wall like a picture or recessed using optional mounting brackets. **A "must item" for a First Class Ham Shack. Call HRO for special pricing opportunities.**

Aviation

ICOM

Icom's air band tranceivers are perfect for portable use. These have the same superior design as their amateur radios.



IC-A22 Super Compact Portable NAV / COM

Call for HRO Prices

The compact IC-A22 aviation transceiver features excellent audio quality on the COM side and a VOR transceiver with CDI function on the NAV side.

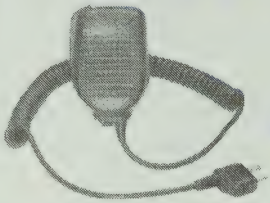
NAV features include:
- Display of radial heading TO and FROM VOR stations.
- CDI shows deviation from course.
- 200 navigation channels.
- ABSS identifies direct radial to a VOR.
- Semi-duplex allows you to contact flight services while receiving VOR signals.

Ergonomic keypad controls all functions. A rotary control allows quick tuning of all frequency and memory channels. This rugged radio has an alpha numeric display, built-in sidetone function, 50 memories, one-touch selection of the 121.5 MHz emergency frequency, scanning, VHF marine weather reception; 12-15 VDC power operation with optional power cord; 5 W output.

IC-A3 Airband Portable COM

This compact 760 COM channel airband transceiver provides easy access to all functions via its ergonomic keypad. A rotary control tunes frequencies and memories. The rugged IC-A3 has an alpha numeric display, built-in sidetone function, 50 memories, one-touch selection of 121.5 MHz emergency frequency, scanning, VHF marine weather reception; 12-15 VDC power operation with optional power cord; 5 W output.

PREMIER communications



SPM-100

SPM-200

Speaker Microphones

Premier's line of speaker microphones fits most popular HTs. The microphones use electret condenser elements especially designed to enhance American voices. The SPM-500 throat microphone uses a special vibration pickup that eliminates external noises. The SPM-400 is an all-in-one earbud and boom mike requiring no headband or straps.

SPM-400

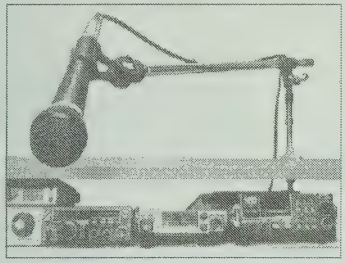
SPM-500

Model	Description	HRO Price
SPM-100	Speaker / mike for ADI, Icom, Standard, Yaesu	$27.95
SPM-101	Speaker / mike for Kenwood	$29.95
SPM-102	Speaker mike for FT-50R/VX1	$33.95
SPM-103	Speaker mike for Mototola Radius Line	$33.95
SPM-200	Lapel mike and earphone for ADI, Icom, Standard, Yaesu	$13.95
SPM-201	Lapel mike and earphone for Kenwood	$19.95
SPM-202	Lapel mike w/ ear bud for FT-50R/VX1	$20.95
SPM-202E	Lapel mike w/ear hook for FT-50R/VX1	$24.95
SPM-203	Lapel mike w/ ear bud for Motorola Radius Line	$29.95
SPM203E	Lapel mike w/ear hook for Motorola Radius Line	$34.95
SPM-300	Speaker / mike for ADI, Icom, Standard, Yaesu. Includes on-mike volume control.	$34.95
SPM-301	Speaker / mike for Kenwood. Includes on-mike volume control.	$39.95
SPM-302	Speaker mike for FT-50R/VX1	$40.95
SPM-400	Earpiece w/ mini boom mike for ADI, Icom, Standard, Yaesu	$25.95
SPM-401	Earpiece with mini boom mike for Kenwood	$27.95
SPM-402	Earpiece with mini boom mike FT-50R/VX1	$29.95
SPM-403	Earpiece with mini boom mike Motorola Radius Line	$39.95
SPM-500	Throat mike and earpiece for ADI, Icom, Standard, Yaesu	$59.95
SPM-501	Throat mike and earpiece for Kenwood	$61.95
SPM-502	Throat mike and earpiece for FT-50R/VX1	$62.95
SPM-503	Throat mike and earpiece for Motorola Radius Line	$61.95

MICROPHONES & HEADSETS

HM-10 Series

By selecting the correct hardware, you can design the EXACT audio set up you need for your station. With Heil hardware you can clamp it, screw it, bolt it, or hold the **HM-10.** The components are shown below. They are available pre-wired for Kenwood, Yaesu and Icom. Please specify your radio.



Model	Description	HRO Price
HM-10 (4)	Mike with case and HC-4 element	$85.95
HM-10 (5)	Mike with case and HC-5 element	$85.95
HM-10 Dual	Mike with both HC-4 and HC-5	$131.95
MA-1	Adjustable Boom	$49.95
FS-1	Foot Switch	$24.95
TB-1	Table Base Mount	$19.95

Replacement Mike Elements

HC-4 / HC-5

The **HC-4** is for serious DX and contest operators. With a 10 dB peak at 2,000 Hz and the low rolled off sharply at 500 Hz, this is best for getting through the pile ups. **HRO Price $29.95**

The **HC-5** has higher fidelity and is the recommended element for the Icom SM-5/6. The output level matches that required for the Kenwood and Yaesu HF radios. **HRO Price $29.95**

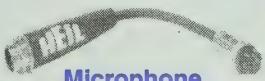
Pro Headsets

Heil's headsets for the amateur provide comfort and performance. Available for use with Icom, Kenwood and Yaesu. Contact HRO for specifications. Connecting cables optional for Icom, Kenwood and Yaesu.

Pro Set The first in the Pro-Series Boom Headsets, the Pro Set provides superior comfort and quality. **HRO Price $119.95**

Pro Micro Heil's newest addition to the Pro Series is the Pro Micro. It's virtually a miniature version of the Pro Set. Created for long-term comfort and superior performance, it doesn't cover the entire ear like the Pro Set–a feature requested by some Hams. **HRO Price $99.95**

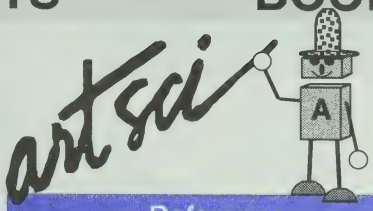
Pro 5 The Pro 5 is a single side version of the Pro Set. Some have requested a single side Boom Set so they can keep one ear open for room sounds or multiple transceiver monitoring. **HRO Price $109.95**



Microphone Pre-Amp for Icom (HMP)

Improve the response curves and gain for Icom radios with Heil mike elements. **HRO Price $54.99**

BOOKS



Reference

Amateur Handbook

This book is like a mini Amateur library! Contains charts, tables, construction plans for all areas of amateur radio. Never go looking through all your other books again for that piece of information. It's here! **HRO Price $14.95**

U.S. Repeater Map Book

The PERFECT traveling companion for the radio enthusiast. Road maps show major highways and cities in every state. Amateur radio repeater frequencies are included. This is a must for truckers and travelers. Maps are enhanced to provide greater highway detail. **HRO Price $9.95**

Technical

Guides to Technical Radio Modifications & Alignment Controls

Easy to follow instructions (with detailed drawings) to enhance almost all brands of amateur HT's and mobile radios. Includes extended frequency plans. **Volume A** (Icom, Kenwood, Scanners), **Volume B** (Alinco, Standard, Yaesu, Others) **HRO Price $19.95 each**

Lost Users Manuals

Lost the manual to your radio? Bought a used rig with no manual? Lost Users Manual has operating instructions on most popular VHF & UHF radios: Alinco, Icom, Kenwood, Yaesu, Uniden. **HRO Price $19.95**

Shortwave

North American Shortwave Frequency Guide

A comprehensive by frequency list of all HF broadcasts by every country (worldwide) and service that can be heard in North America. **HRO Price $19.95**

Scanning

Federal Assignments

Ever wonder what the federal government agencies are up to? Listen in! This book, third edition, has the secret frequencies used by our government. By far this is the most comprehensive book we know of. **HRO Price $24.95**

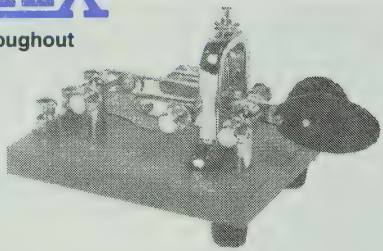
Police & Fire Communications Handbook

With the ever changing police frequencies in Southern California, it's time an accurate, up-to-date scanner book was available. More than 380 pages of frequencies, inputs & tones. **HRO Price $19.95**

VIBROPLEX®

Quality and Pride Throughout

"Vibrokeyer"

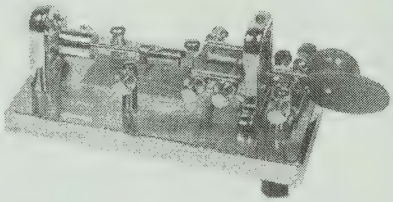


The Vibrokeyer is designed for those who prefer a non-iambic paddle. The single lever paddle imitates the automatic dots and dashes of the electronic keyer with the same motion used to operate the "Bug".

Vibrokeyer Gold: The entire base is 24K gold plated with bright decorative chrome top parts. Smooth, jeweled movements for precision control. Stainless steel hardware where appropriate. **HRO Price $269.95**

Vibrokeyer Deluxe: Highly polished decorative chrome base with bright chrome top parts. Silky smooth movements are jeweled as in fine Swiss watches. **HRO Price $159.95**

Vibrokeyer Standard: A neat, crisp black textured finish base with bright decorative chrome parts. Non-jeweled movement. **HRO Price $119.95**



"Original"

The *Original Vibroplex*, is a genuine piece of history. First patented in 1894, the Original is still manufactured today using tools and dies very similar to those used by its inventor, Horace G. Martin. Modern-day operators can put their fist to the same equipment as the Western Union and railroad operators of old.

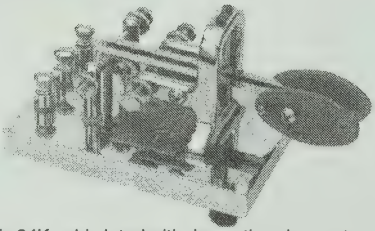
Original Gold: The entire base is 24K gold plated, with bright decorative chrome top parts. Smooth, jeweled movements for precise control. Stainless steel hardware where appropriate. **HRO Price $299.95**

Original Presentation: 24K gold plated brass plate on a highly polished decorative chrome base with bright chrome top parts. **HRO Price $249.95**

Original Deluxe: Same as the Presentation but without the 24K gold plated brass plate. **HRO Price $179.95**

Original Standard: A neat, crisp black textured finish base with bright decorative chrome top parts. **HRO Price $139.95**

"Iambic"



This is the modern descendent of the Original. It incorporates the traditional Vibroplex look for use with modern electronic keyers.

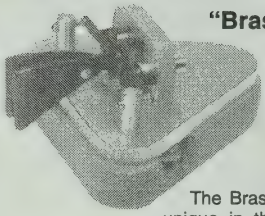
Iambic Gold: The entire base is 24K gold plated with decorative chrome top parts. Smooth, jeweled movements for premium control. Stainless steel hardware where appropriate.
HRO Price $269.95

Iambic Presentation: 24K gold plated brass plate on a highly polished decorative chrome base with bright chrome top parts. Its silky smooth jeweled movements are like those found in fine Swiss watches. **HRO Price $239.95**

Iambic Deluxe: Same as Presentation but without the 24K gold plated brass plate. **HRO Price $159.95**

Iambic Standard: A neat, crisp black textured finish base with bright decorative chrome top parts. **HRO Price $119.95**

"Brass Racer"

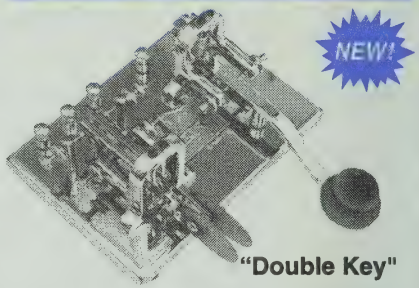


The Brass Racer keys are unique in that there are NO springs in the design. They are crafted from solid brass and mounted on a base of polished hardwood. Tension on the paddle is infinitely adjustable by the use of magnets.

Brass Racer Iambic: This iambic paddle is designed for use with an external keyer or the keyer in your radio. The Triangle Brass base is mounted on polished hardwood. **HRO Price $89.95**

Square Brass Racer: This key is a departure from our traditional style. A distinctive design of brushed lacquered SQUARE brass mounted on polished hardwood. **HRO Price $124.95**

Combination



"Double Key"

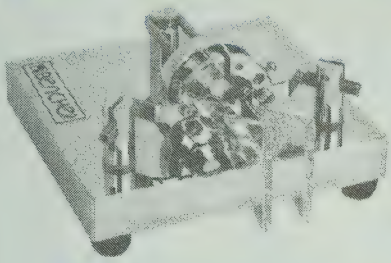
By popular request, Vibroplex has combined its Straight Key with the classic Vibrokeyer or Iambic paddle on one massive steel base. The Double Key allows the operator to instantly switch from an electronic keyer to the personal touch of a straight key.

Gold Double Key: The entire base is 24K gold plated with bright decorative chrome top parts. Stainless steel hardware where required. **HRO Price $379.95**

Double Key Deluxe: Highly polished chrome base with decorative chrome top parts. **HRO Price $339.95**

Double Key Standard: A neat, crisp, black-textured finish base with bright chrome top parts. **HRO Price $289.95**

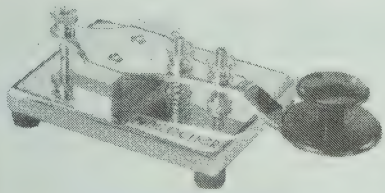
BENCHER, INC.



BY Series Iambic Paddles

You will enjoy the smooth, precise action of a Bencher paddle with any iambic keyer. These paddles feature a heavy steel base, gold plated silver contact points, non-skid feet, stainless steel adjustable spring, self-adjusting needle bearings, and large acrylic finger paddles.

HRO Prices:	**BY-1**	**Black**	**$89.95**
	BY-2	**Chrome**	**$99.95**
	BY-3	**Gold**	**$269.95**
	BY-4	**Gold/Blk**	**$159.95**



RJ Series Hand Keys

The "RJ" hand keys have an advanced American-style design derived from the telegraph keys that won the west, yet with modern features like Oilite bearings, a solid navy knob, gold-plated solid silver contacts, full locking adjustments of all tension and spacing parameters, and Bencher quality materials throughout.

These keys are ideal for the new amateur just mastering code as well as the old time brass pounder anxious to "clear the hook." This key offers the Morse code operator an investment that will bring years of pride and satisfaction. Try the Bencher "RJ" hand key at your nearby HRO. You will be convinced there is no better key available.

HRO Prices:	**RJ-1**	**Black**	**$89.95**
	RJ-2	**Chrome**	**$89.95**

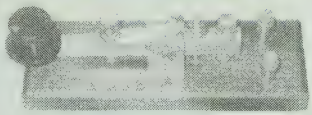
ST Series Single Lever Paddles

Superb Bencher features and construction for the ham who prefers single lever operation.

HRO Prices:	**ST-1**	**Black**	**$89.95**
	ST-2	**Chrome**	**$99.95**

ALPHA DELTA

Kent Paddles

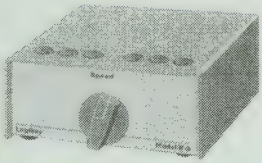


Kent Straight Key

These paddles offer a smooth feel with sealed ball bearings. Precise gap adjustments with knurled heads on fine pitched screws and locking nuts. Made from solid brass within a permanent brass housing.

Twin Paddle	(TP-1)	$149.95
Single Paddle	(SP-1)	$139.95
Straight Key	(SK-1)	$129.95

LOGIKEY



NEW!

K-3 Iambic Memory Keyer

Features six editable messages with 1530 characters total. Messages can include programmed functions. Auto-insertable contest serial number, speed control range 5-60 WPM, adjustable weighting, adjustable frequency monitor, tune function for X-meter adjustment, automatic character spacing, allows for paddle inserted text and more! **HRO Price $129.95**

On-line Ordering
http://
www.hamradio.com

Straight Keys

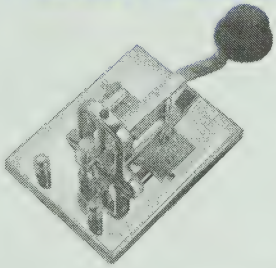
Master Key 330-001

The perfect straight key comes with cord and plug. Isolated contact assembly separates keying circuit from hardware. Includes gold-plated silver contacts, adjustable key arm, Navy knob, and heavy die-cast base. **HRO Price $72.95**

Straight Keys

Keys with gold-plated heavy silver contacts, adjustable key action, and heavy die-cast bases. Brass or nickel-plated hardware, standard or Navy knobs.

VIBROPLEX®



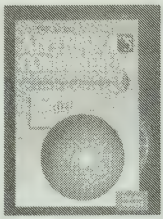
For the first time ever, Vibroplex® is offering a STRAIGHT key. It has unique mechanical action, unlike any straight key that has ever been manufactured,

Straight Key Gold: The entire base is 24K gold plated with bright decorative chrome top parts. Stainless steel hardware where appropriate. **HRO Price $289.95**
Straight Key Deluxe: Highly polished chrome base with decorative chrome top parts. **HRO Price $169.95**
Straight Key Standard: A neat, crisp black textured finish base with bright chrome top parts. **HRO Price $129.95**

ARRL BOOKS WHAT'S NEW

Personal Computers in the Ham Shack

Hams and computers, computers and hams – they're all but inseparable these days. Now there's one place to learn how to use your personal computer for all kinds of ham-related tasks: logging and contesting, station control, QSLing and circuit design. Includes a glossary of terms and a resources chapter with references for further information. **$15.95**



ARRL Antenna Compendium Volume 5

The latest in the popular series, a compilation of never-before-published articles on antennas, transmission lines and propagation. Features articles on HF discones, ray tracing, dual-band VHF whip and many more. Includes valuable software. **$20**

Getting On Track with APRS
A Hands-On Guide to the Automatic Packet Reporting System

Your one stop for quick-and-easy iinstructions for installing and using the exciting new APRS software. Anyone with a packet station and computer can join the fun. APRS provides a real-time map display of participating stations. When used with a GPS receiver, it is ideal for tracking moving stations. Separate sections cover DOS, Windows and MAC platforms. Chapters include custom installation, map-making, harware requirements, and even specialized uses such as direction finding, telemetry and DX plotting. **$14.95**

QRP Power

Whether you've just been bitten by the urge to operate flea power, or you've already discovered just how much fun it is to operate with 5 watts or less, this is the book you've been looking for. It's crammed with projects you can build and resource information you can use. In addition to the best recent QRP-related articles from QST, QEX and The ARRL Handbook, there's a new, in-depth article on NN1G's popular 40-40 transceiver. **$12**

The ARRL Handbook for Radio Amateurs

This special 75th anniversary edition is a must for every ham and experimenter. Among the new projects in this edition is a new antenna tuner project, an amplifier for the upcoming Phase 3D satellite, and a new multimode VHF superregen-erative receiver. If it's know-how you're looking for, you'll find it in The ARRL Handbook. **Retail $32.00**

DXing on the Edge:
The Thrill of 160 Meters

A fascinating chronicle of what it takes to navigate the 160 meter band. Includes useful operating tips and descriptions of many practical antennas needed to be successful on 160 meters. This book includes an audio CD with some truly exotic and exciting QSOs made from prominent DX stations. Many photos and historical information included, from the early 1930s through the present day. by Jeff Briggs, K1ZM. **Retail $29.95**

The ARRL 1998-99 Repeater Directory

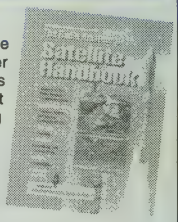
You'll find nearly 21,000 FM and ATV repeater listings covering North, South and Central America. You'll even find a number of listings for Europe and the Middle East, as well as an updated list of ARRL Frequency Coordinators. **Retail $8.00**

The ARRL Antenna Book 18th Edition.

Hams and professionals will find a wealth of fun projects and practical information: Designing, building and installing almost any imaginable type of antenna; Selecting and using the proper feed line and antenna tuner; Expanded coverage of low frequency antennas; Greatly expanded coverage of elevation angles needed for world-wide HF propagation; New chapters on the fundamentals, including the effects of irregular local terrain; Expanded information on mobile and maritime antennas. Software Included. **Retail $30**

Satellites and Space

The Radio Amateurs Satellite Handbook



By Martin Davidoff, K2UBC (author of the highly acclaimed predecessor, The Satellite Experimenter's Handbook). The most comprehensive book ever written about amateur satellites! Long-time satellite operators and beginners will enjoy its in-depth coverage: setting up a station, choosing the right antenna for the right satellite, and tracking the "birds." Includes operating details for every active amateur satellite, the upcoming Phase 3D satellite, and all Amateur Radio operations from the US Space Shuttles (SAREX) and Russian Mir space station. Thorough appendices covering profiles of computer programs, Internet sites, FCC Rules, and a complete history of amateur satellite and space operations. Retail $22

Satellite Anthology, 4th Edition

What will the new f3D satellite do, anyway? Which amateur satellites are easiest to use? What equipment and antennas do I need? You'll find the answers – and a great deal more – in this compilation of articles from QST, the AMSAT Journal and the World Wide Web. A perfect introduction to the excitement of space communications! **$12**

Satellite Experimenter's Handbook

Widely recognized as the best book available on the ham satellites, the Satellite Experimenter's Handbook has the information you need to get on or enhance your enjoyment of the amateur satellites. You'll find an immense store of valuable data on the active satellites, plus a history of the amateur space program, ground station equipment and antennas, orbits, tracking, weather and TV satellites, and more. **$20**

Weather Satellite Handbook

A popular and easy-to-use reference for anyone interested in viewing our world from space. The revised and expanded 5th edition features an interface project that allows you to capture fascinating images from various weather satellites and HF WEFAX broadcasts (a kit is available). You'll learn how weather satellites function, how to build or modify your own receiving equipment and how to buy or build the right antennas. **$20. Companion software** (revised for the 5th edition of the book) available for IBM PCs and compatibles. **$10**

ARRL TECHNICAL BOOKS

AIM	Antenna Impedance Matching
DB	Data Book
DN	W1FB Design Notebook
FSIR	First Steps in Radio
HK	Hints and Kinks
ITRFD	Intro to Radio Freq. Design
LBD	Low Band DXing
MEM	Microwave Experimenter Manual
NAN	Novice Antenna Notebook
OM	Operating Manual
PDOYA	Yagi Design
QRP	QRP Classics
RADIODESIGN	Radio Design IBM Software
RASH	The Radio Amateur's Satellite Handbook
REFLECTIONS	SWR Theory
RFE	RF Exposure and You
RFI	Radio Frequency Interference
RSGB-AWARDS	Awards Book
RSGB-OP MAN	Amateur Radio Operating Manual
RSGB-RCH	Radio Communication Handbook
RSGB-VHF	VHF / UHF Handbook
SA	Satellite Anthology
SEH	Satellite Experimenters Handbook
SSD	Solid State Design
SSS	Spread Spectrum Source Book
TFRB	The FCC Rule Book
TLT	Transmission Line Transformers
TAH	ARRL 1998 Hardcover Handbook
OARS	Operating an Amateur Radio Station
WSH	Weather Satellite Handbook

ARRL LISTINGS

DXCC LIST	Official ARRL DXCC List
LB	Log Book
ND	Net Directory
RD	Repeater Directory

ARRL READING

CQGS	CQ Ghost Ship
DVQTH	Death Valley QTH
DXBD	DX Brings Danger
DXCC Companion	DX Guidebook
FSTS	From Spark to Space
GCQ	Grand Canyon QSO Book
HFNH	Help for New Hams
MBQ	Murder by QRM
MORSE CODE	The Essential Language
NCJ	Bi-Monthly National Contest Magazine
NS	Night Signals
NN	Novice Notes
QRP NOTE	QRP Notebook
QST	Monthly Magazine of ARRL
SOSAM	SOS at Midnight
YVC	Your VHF Companion
FIREWATCH	Firewatch Novel
ET	Easy Target Novel

ARRL PACKET BOOKS

GTPR	Gateway to Packet Radio
PSMSA	Packet Speed, More Speed & Apps

ARRL MAPS

GRID ATLAS	Grid Locator Atlas
GRID MAP	Grid Locator Map
USCAM	U.S. Call Area Map
WM	World Map

ARRL ANTENNA BOOKS

AB	17th Antenna Book
ACVOL5	Antenna Compendium Vol. 5
AN	W1FB Antenna Notebook
NAN	Novice Antenna Notebook
RSGB-ANT	H.F. Antenna Book
RSGB-WIRE	Wire Antennas
YAD	Yagi Antenna Design

ARRL LICENSE PREPRATION

10-15ARRL	10-15 WPM Code Tape
13-14ARRL	13-14 WPM Code Tape
15-22ARRL	15-22 WPM Code Tape
5-10 ARRL	5-10 WPM Code Tape
GENVIDEO/Soft	Gen Class Video / IBM Exam
TECHVIDEO/Soft	Tech Class Video / IBM Exam
NYT III	Study Guide for the No-Code Technician License
LM-TECHNICIAN	Technician Class Manual
LM-GEN-II	General Class Manual
TAACLM	Advanced Class Manual
TAECLM	Extra Class Manual
TFRB	FCC Rule Book
YITMC	Introduction to Morse Code
TECH Q&A	Technician Q&A Study Guide

Study Aids

AMECO

100-T	Junior Code Tape
101-T	Senior Code Tape
102-01	Amateur Radio Theory Course
103-T	Advanced Code Tape
104-T	Extra Class Code Tape
105-QT	General Class QSO Course Tape
106-QT	Extra Class QSO Course Tape
12-01	General Class Test Manual
17-01	Extra Class Test Manual
26-01	Advanced FCC Test Manual
27-01	Novice FCC Test Manual
28-01	Technician Class Test Manual
EN-1	Novice Class Exam
78-01	Codeless Technician Manual

GORDON WEST / W5YI

GWTM	No Code Technician Manual
GWGM	General Class Study Manual
GWAM	Advanced Study Manual
GWEM	Extra Class Study Manual
NCV	No-Code Video Seminar - Tech
NCVP	No-Code Video Seminar - Tech, manual, rule book
HCV	Gorden West Ham Class Video
GWNT	Novice Code Teacher Tapes
GWGT	General Class Code Refresher Tape
GWET	Extra Class Code Refresher Tape
GWN6	Novice Learing Code Tape
GWG6	General Speed Builder Code Tape
GWE6	Extra/Commercial Code Course Tape
GWNW	Novice Class Theory Tapes
GWTW	Technician Class Theory Tapes
GWGW	General Class Theory Tapes
GWAW	Advanced Class THeory Tapes
GWEW	Extra Class Theory Tapes

KB6MT

CODE	Novice to 21 WPM Code Training Tapes
IT	Instant Theory Tape
IT-NCTECH	Instant Theory No Code Tech
IT-NOVICE	Instant Theory Novice
IT-TECH	Instant Theory Tech
IT-GEN	Instant Theory General
IT-ADV	Instant Theory Advanced
IT-EXTRA	Instant Theory Extra
WORDS	Code word course

Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.

CQ Books / Publications

1998ALMANAC	CQ 1997 Ham Radio Almanac
ARC1998	Amateur Radio Calendar 1998
BAUBAU	Building & Using Baluns and Ununs
LMOA	Lew McCoy on Antennas
QUADANTENNAS	Quad Antennas
RCC1998	Radio Classics Calendar 1998
TPROM	The Packet Radio Ops Manual

ARTSCI

AMAT HB	Amateur Handbook
FA	Federal Frequency Book
LUM	Lost Users Manual
NASFG	Shortwave Guide
RTM	Guide to Radio Mods
RA	Radio Atlas
USRG	US Repeater Guide

RADIO PUBLICATIONS

ANTENNA HB	Antenna Handbook
BEAM	Beam Antenna Handbook
INTERFERENCE	Interference Handbook
QUAD	All About Cubical Quads
SHORTWAVE	Better Shortwave Reception
VERTICAL	All About Vertical Antennas
VHF	All About VHF Amateur Radio
WIRE	Low-Cost Wire Antennas
COMPLETE DX	Complete DX'er by W9KNI

Amateur Directories

CALLBOOK

RAC-CD	National and International Callbook CD-ROM–See page 50

QRZ! Ham Radio CD-ROM

QRZ! Ham Radio's CR-ROM for DOS and Windows is the perfect information source for Hams and SW listeners. For details see page 50.

Magazines

73	73 Monthly Magazine
CQ	CQ Monthly Magazine
CQVHF	CQ VHF Magazine
Popular	Popular Communications
QST	QST Monthly Magazine
MT	Monitoring Times
WRN	World Radio News

Short Wave Listening

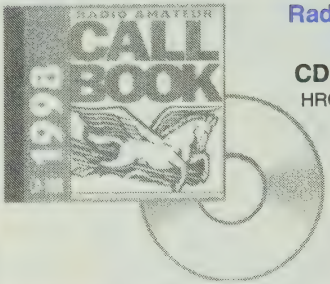
MT	Monitoring Times Monthly
PASSPORT	Passport to World Radio
WRTVH	World Radio TV Handbook

Scanner Books

HRO stocks many books that contain scanner frequencies for localities around the country. Contact your nearest HRO store for details.

Internet On-line Ordering 24 Hours a Day
http://www.hamradio.com

CD-ROMs

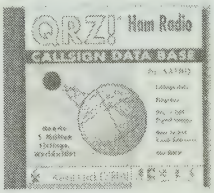


Radio Amateur Callbook CD-ROM 1998

HRO Price $49.95

This is the most extensive radio amateur directory on the market. Incorporating both the North American and International editions of the world's most respected callbooks, it provides more than 1.3 million listings in more then 250 countries, islands, and dependencies. By including several countries not found in other directories, the Callbook offers unmatched world coverage.

- Windows / DOS platform.
- Data display by callsign, last name, city, license class, issue, and expiration dates.
- Search U.S. stations by callsign, last name, and city.
- Search international by callsign, last name, city. Text search by name, street, city, province, or region after selecting country.
- Unique sound output of Morse code alphabet can be used by the blind or anyone who wants to learn Morse code.
- Windows clipboard tool for single label or applications. Import data into logging spread sheet, word processor, or label printing program. Logging program interface available.
- Listings of clubs, "Then and Now" call letter changes, military, and silent keys.
- Text files listing prefixes by countries (40 zones), DXCC countries list, census of amateur prefixes, QSL bureaus, reciprocal operating agreements, 10-meter beacons, 6-meter beacons, international "Q" signals, and much more.



QRZ! Ham Radio CD-ROM

HRO Price $19.95

Ham radio and short wave enthusiasts can use the QRZ data base with Windows 3.1, Windows 95, or DOS software. Several ham radio logbook utilities support the QRZ database.

Of particular interest is the new QRZWIN call sign search-and-retrieval software that allows easy access to more than 600,000 names and addresses of US and Canadian hams. The full name, address and FCC license information is included with each record. QRZWIN provides editing and printing functions which make custom mailing lists easy. Import the information to your favorite word processor for advanced formatting and list processing. QRZ features an open database with documentation so users can create their own custom applications.

Also on the CD-ROM are the complete text to FCC approved license examinations, questions and answers, current rules and regulations, and 100's of shareware utilities.

ARRL CD-ROMs

ARRL Handbook

The ARRL Handbook CD 2.0 features all of the text and illustrations from the printed 1998 ARRL Handbook on a versatile CD-ROM. Every word, every page! It's the ultimate source of radio communications and electronics information. Find-it-Fast with versatile search capabilities and Hypertext links that take you to the exact information you're looking for. Hear Audio Clips of a wide variety of Amateur Radio modes. Add Bookmarks to quickly return to your favorite topics. Print and Save pages or sections, and use the clipboard with other Windows applications. This version includes an enhanced image viewer, and live World Wide Web links to launch your web browser. Zoom In and Out to see drawings, photos and text enlarged or reduced. Requires Microsoft Windows.

HRO Price $49.95

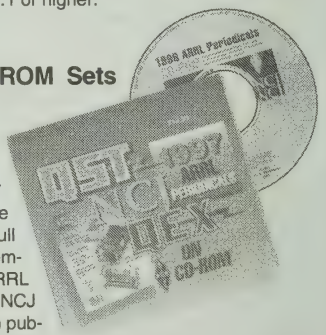
QST View

Here are back issues of QST in convenient, space-saving CD-ROM format. Each page, all the ads, articles, columns and covers has been scanned to provide a black-and-white image that can be read on your computer screen or be printed. Easy-to-use software included on the CD allows you to: search for articles by title and author, select specific year and issue, and browse individual articles or columns.

Available sets: 1990-94; 1985-89; 1980-84; 1975-79; 1970-74; 1965-69; 1960-64; 1950-59; 1940-49; 1930-39. Each set of CDs has an index to aid in finding the page or section of the issue you want to view or print. Requires Microsoft Windows 3.1 or higher.

Each set $39.95

ARRL Periodicals CD-ROM Sets



Each Periodicals CD-ROM is a compilation of an entire year's worth of reading on one space-saving CD! Now available in 1995, 1996 and 1997 editions. Here are some of the special features you'll find: the full text of every QST (ARRL's membership journal), QEX (The ARRL Experimenter's Exchange) and NCJ (The National Contest Journal) published during a year—including every article, column, and product review; every drawing, table, illustration and photograph (many in color); more than 1000 advertisement images, indexed alphabetically by vendor and product. A powerful search engine finds your desired information quickly by article titles, call signs, names or just about any other word. Windows printing and Clipboard support, so you can print out articles or share them with other Windows applications. Create bookmarks at often-used articles and more. **Each set $19.95**

Alinco's Value Leaders Give You More For Less!

DJ-191T 2m HT

Up to 5 watts output, 41 memories, huge display. DJ-190 (no keypad) also available.

DJ-G5T 2m/440 HT

Up to 5 watts output, Channel Scope™, 100 memories/band, CTCSS encode and decode, rf attenuator, 13.8 vdc input port, V/U, V/V, U/U, U/V, programmable 2nd PTT, AM air band receive, full duplex and cross band repeat capabilities

DJ-C1T 2m HT, DJ-C4T 440 HT

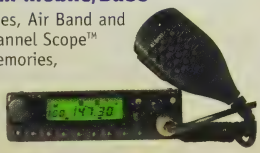
"Credit card" size, 300 mw output, 21 memories, lithium-ion battery soft case, quick charger, earphone all included! DJ-C1T also includes AM air band receive.

DJ-S11T 2m HT, DJ-S41T 440 HT

"Pager Size", 340 mw output, 21 memories, uses AA, NiCd or external power, Easy to operate and program, great tx and rx audio, fits in pocket or purse! Check the low price!

DR-150T, DR-150TQ 2m Mobile/Base

50 watts output, 100 memories, Air Band and UHF (440 ~ 450 Mhz) RX, Channel Scope™ display, 2 VFOs, auto dial memories, 9600 packet port, H/M/L output, DR-150TQ includes CTCSS decode.



DR-140T, DR-140TQ 2m Mobile/Base

50/5 watts output, 51 memories, alphanumeric display, AM air band receive. DR-140TQ includes CTCSS decode.

DR-610T, DR-610TQ 2m/440 Mobile/Base

50 watts VHF, 35 watts UHF, Channel Scope™ display, 120 memories, detachable face, V/U, V/V, U/U, U/V, RF attenuator, two VFOs, H/M/L output, AM air band receive, internal duplexer, 9600 packet port, DR-610TQ includes CTCSS decode.

DR-605T, DR-605TQ 2m/440 Mobile/Base

50 watts VHF, 35 watts UHF, 51 memories each band, "set and forget" squelch, UHF TX range of 430 ~ 449.995 MHz allows for satellite work, internal duplexer, 9600 packet port. DR-605TQ includes CTCSS decode. **The value leader in dual band mobiles!**

DR-M06TH 6m FM Mobile/Base

50~54 MHz, 100 memories, 20 watts output. Work repeaters or simplex, includes CTCSS encode (decode optional), DTMF mic.

DX-70T, DX-70TH HF+6m Mobile/Base/Portable

160m ~ 6m Amateur Band TX in all modes, general coverage RX 150 KHz ~ 30 MHz and 50 ~ 54 MHz, 2 VFOs, 100 memories, removable face for remote mounting, speech compressor, SSB, CW and AM narrow filters, full, semi or automatic break-in, multi-function control, RIT, TXIT, easy split operation, RF gain, CTCSS for 10 and 6m repeaters. Both models feature 100w output on HF, DX-70TH has 100w output on 6m, DX-70T has 10w output on 6m.

DX-77T HF Desktop Transceiver

160 ~ 10m Amateur Band TX in all modes, general coverage RX 500 KHz ~ 30 MHz, 2 VFOs, internal keyer (6 ~ 50 wpm), 100 memories, 13.8 VDC input, optional computer control capability, CTCSS encoder (front panel programmable), RIT, easy split operation, speech compressor, selectable AGC, large front panel speaker. **The value leader in HF desktop radios!**

DM-340MVT DC Power Supply

30 amps nominal, 35 amps peak, 0~15 VDC variable output, meters included at no extra cost, convenient front panel connections, output connections include binding posts, spring clips and cigar lighter, circuit protection, perfect for base station operation or bench testing.

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Ask your dealer about Alinco's 2-year extended warranty program

"The quick-release remote front panel gives you so many installation options."

"And with dual receive you can talk on one band, and listen on another!"

"Plus, the high-tech Enhanced Smart Search™ is great for finding repeaters --and you can watch it all on the dual display."

"Looks like Yaesu did it again!"

FT-8100R

Compact Dual Band Mobile

Now a dual-bander that remotes and is easy-to-use, without sacrificing the features you want!

With its quick-release, remote front panel system, the FT-8100R combines high-performance dual-band features in a simple-to-operate rugged mobile built to the endurance standards of commercial radios. The result is installation flexibility and industry-first, "must-have" advantages!

Use dual receive (V+V, U+U or V+U), or talk on one band while listening on another. Watch Yaesu's exclusive Enhanced Smart Search™ automatically seek out and load active frequencies--great for finding new repeaters while traveling.

Get wide receive coverage--from 110 to 550 MHz and 750 to 1300 MHz* for public safety, marine, aircraft, and weather channels. Enjoy up to 50 Watts of VHF power output (35 Watts on UHF) with High/Medium/Low choice on each band, and "plug and play" 1200 or 9600 bps packet. Utilize 208 memory channels--the greatest available on any remote mobile--to store repeater offset, CTCSS tone, packet baud rate, and power level.

Yaesu's popular Omni-Glow™ display provides a wide field of view, and includes a DC voltage meter. Quickly program, or clone frequency memories with optional Windows™ PC programmable ADMS-2D.

"User-friendly" describes the streamlined front panel layout. Eight clearly-marked keys, and separate Volume/Squelch controls for each band, make operation easy. And the backlit DTMF microphone includes 3 user-programmable keys...but no awkward keypad cover!

Don't sacrifice high-performance features in your dual-band mobile installation Get the easy-to-use FT-8100R at your Yaesu dealer now!

YAESU

...leading the way.™

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Features

- Frequency Coverage
  - RX: 110~550 MHz
  - 750~1300 MHz*
  - TX: 144~148 MHz
  - 430~450 MHz
- Detachable Front Panel (remotable w/optional YSK-8100)
- 3 Power Output Levels
  - 2m 50/20/5 Watt
  - 70cm 35/20/5 Watt
- 208 Memory Channels
- Enhanced Smart Search™
- CTCSS Encode
- Built-in Duplexer
- S-Meter Squelch
- Dual Receive (V+V,U+U,V+U)
- Crossband Repeat (bidirectional or one-way)
- PC Programmable w/optional ADMS-2D
- Digital Battery Voltage Display
- Auto Power Off (APO)
- Omni-Glow™ Display
- 1200/9600 bps Packet Compatible
- Alternating-Band Memory Selection (ABMS)
- DTMF Autodialer (6 Memories)
- Time Out Timer (TOT)
- Accessories: Consult your local Yaesu dealer.

*Cellular & 900 MHz Cordless Phone frequencies blocked.

50W/VHF
35W/UHF

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Ultra Compact Dual Band Handheld **FT-50RD**

One tough little dual bander!

Features

- Frequency Coverage
  Wide Band Receive
  RX: 76-200 MHz, 300-540 MHz, 590-999 MHz*
  TX: 144-148 MHz, 430-450 MHz
- AM Aircraft Receive
- MIL-STD 810 Rating
- Digital Coded Squelch (DCS)
- 112 Memory Channels
- 12V DC Direct Input
- High Speed Scanning
- Alphanumeric Display
- CTCSS Encode/Decode
- Auto Range Transpond System™ (ARTS™)
- Dual Watch
- Direct FM
- High Audio Output
- ADMS-1C Windows™ PC Programmable
- Four Battery Savers:
  Automatic Power-Off (APO)
  Receive Battery Saver (RBS)
  Selectable Power Output (SPO)
  Transmit Battery Saver (TBS)
- Time Out Timer (TOT)
- 2.5 and 5 Watt Versions Available
- Built-in Digital Voice Recording System (DVRS)
- Full line of accessories

NOW WITH BUILT-IN DELUXE KEYPAD

"You notice how loud this HT's audio is?"

"Yeah, it's Mil Spec tough like a commercial HT."

"Easy to operate, small, great price!"

"Yaesu did it again!"

US MILITARY APPROVED MIL-SPEC 810X

The foremost in top-performing, durable, dual band handhelds now includes the FTT-12 DTMF keypad with CTCSS enc/dec, DCS enc/dec, DVRS and paging/coded squelch. Manufactured to rigid commercial grade standards, the FT-50RD is the only amateur dual band HT to achieve a MIL-STD 810 rating. Already a winner; the deluxe keypad makes this stand-out HT even better! Water-resistant construction uses weather-proof gaskets to seal major internal components against the corrosive action of dust and moisture. And, the rugged FT-50RD withstands shock and vibration, so throw it in with your gear!

Exclusive features set the FT-50RD apart, too. Wide Band Receive includes 76-200 MHz (VHF), 300-540 (UHF), and 590-999 MHz*. Dual Watch checks sub-band activity while receiving on another frequency, then when a signal is detected, shifts operation to that frequency. Digital Battery Voltage displays current operating battery voltage. Digital Coded Squelch (DCS) silently monitors busy channels. Auto Range Transpond System™ (ARTS™) uses DCS to allow two radios to track one another. And, the FT-50RD is ADMS-1C Windows™ PC programming compatible, too. To round out the FT-50RD, it has four battery savers, and super loud audio—remarkable in an HT this size.

A reliable companion where ever you go, the FT-50RD is one tough little dual bander with all the features you want!

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FT-10/40R
Ultra Compact Handhelds
VHF or UHF. Similar to FT-50RD including MIL-STD 810, and other exclusive features.

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Leading the way in HF technology.

FT-1000MP
Revolutionary All-Mode HF Transceiver with EDSP™
•Enhanced Digital Signal Processing (EDSP™) Noise Reducer, RX/TX waveform Contour shaping control, Digital Notch plus IF Notch, Digital CW Narrow Filters, Microphone Equalization • Shuttle Jog™ Tuning Enhancement • Directional Tuning Scale for CW/Digital Modes and Clarifier Offset Display • Selectable Antenna Jacks • Programmable Tuning Steps • 100W PO • Dual In-band Receive with Separate S-meters • Built-in Collins® SSB Mechanical Filter • CW Electronic Keyer with two Key jacks • CW Spot • Automatic Antenna Tuner • 100-117, 200-234V AC and 13.5V DC power inputs • DC version available • 99 Memories.

FT-1000/D
Elite-Class All-Mode HF Transceiver
• 200W PO • Dual Receive • 108 dB dynamic range • Cascaded IF Filters • Direct Digital Synthesis (DDS) • IF Width/Shift/Notch • CW Spot • CW Audio Peaking Filter • CW Electronic Keyer with two Key jacks • IF Noise Blanker • Automatic Antenna Tuner • RF Speech Processor • Front panel RX Antenna selector switch • Two large fly-wheel-weighted tuning knobs • 99 Memories.

FT-920
All-Mode HF/6m Transceiver
• High-Performance 33MIPS* DSP • HF + 50 MHz w/100 Watts-all Bands • MOSFET PA Finals • High Speed Auto Antenna Tuner (works on RX & TX) • Omni-Glow™ Dual Display • Twin VFO Knobs • FET RF Amplifier for High & Low Bands • Digital Voice Memory System • Quick Memory Bank (QMB)Frequency System • 127 Memories. *Million Instructions Per Second

FT-847
HF/50/144/430 MHz All Mode Transceiver DSP Filters--notch, NR and BPF • Built-in 6-Meter • Voice Monitor • Separate Sub-Band Dial • Shuttle Jog Dial • Smart Search • Digital Meter • 19 Memories • 100W for HF/6-Meter; 50W 2-Meter/430 MHz • Crossband Full Duplex • Normal/Reverse Tracking • CTCSS and DCS Encode/Decode • Direct Keypad Frequency Entry • 1200/9600bps Packet-Ready

FT-840
High Performance Compact HF Transceiver
• High Receiver Dynamic Range • Dual Band Stacking VFOs with Direct Digital Synthesis (DDS) • 100W PO • IF Shift • IF Noise Blanker • Digital Mode Interface • CW-Reverse feature • Adjustable Repeater CTCSS Tones • Optional (External) Automatic Antenna Tuner • 100 Memories.

FT-600
Multi-Purpose HF SSB Transceiver
Frequency Range: RX: 50 kHz - 30 MHz; TX: 160-10M • 100W PO • MIL-STD 810 Rating • Alphanumeric Omni-Glow™ LCD Display • Keypad Frequency Entry • Optional CW (500 Hz) and AM (6 kHz) filters available • Dual Watch • Front-mounted Speaker with High Audio Output • PC Programmable • 100 Memories (in 4 banks of 25).

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"VHF, UHF, AM, FM, Air Band, Police, Fire--TV" too? Wow"

"The VX-1R is smaller than most pagers!"

"Over 19 hours of use from the rechargable lithium ion battery!"*

"Looks like Yaesu did it again!"

VX-1R

Ultra-Compact Dual-Band Handheld

Features

Frequency Coverage
Wide Multi-Band Receive
RX: 76~999 MHz**
TX:144~148, 430~450 MHz

AM/FM/TV Broadcast Receive

AM Aircraft/Public Safety Receive

CTCSS Encode/Decode

DCS Encode/Decode

CTCSS/DCS Tone Search

Dual Watch

SmartSearch™

Auto Range Transpond System™ (ARTS™)

Priority Channel Alarm

ADMS-1D Windows™ Programmable

1 Watt External Power Supply

80 Minute Rapid Charger

Flexible Antenna, Belt Clip, Hand Strap

***Cellular blocked*
**Battery Life: 5-5-90 duty cycle.*

The world's smallest HT with all the high-tech features Dick Tracy could ever want!

The ultra-compact size of the VX-1R Dual-Band is the first thing you notice as you cradle it in your palm. But the high-tech features make this radio one you must have now! Simple combinations, using seven buttons and one knob, control this marvel of engineering. One soft key touch, and wide receive VHF/ UHF--76~999 MHz RX (except celllar); 144~148, 430~450 MHz TX, or AM/FM Broadcast, Aircraft, Police, Fire--even TV, spring to life! Touch again for Yaesu-exclusives, SmartSearch™ and ARTS™, or Priority Channel Alarm. Built-in CTCSS and DCS Encode/Decode for 2m/440 amateur bands, CTCSS/DCS Tone Search, and Dual Watch, are included along with 291 Memory Channels in 9 banks with 500 mW power output. Backlit LCD Display shows 6-character alphanumeric capability; backlit keypad makes operation easy in dim light. And, although the VX-1R is the world's smallest† dual-band HT, you get over 19 hours* of use with just a 1 hour recharge from its long-lasting lithium ion battery! Big features, small size--the most satisfying combination in the world! See it at your Yaesu dealer today!

FT-50RD
MIL-SPEC,Heavy Duty, Dual-Band Handheld

FT-51R
Dual-Band with Dual Receive and Help Menu Function

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†Smallest HT as of Jan. 1998

Full Line of *quality* Handheld Accessories...

UNIVERSAL CHARGER

MH-C777 *Universal* *Rapid Charger* *Conditioner*

- ✔ Will charge **nearly any type of rechargeable NiMH and NiCD battery pack!**
- ✔ Will **discharge** and **condition!**
- ✔ Latest **-dV** and **temperature** Detection
- ✔ Support **4.8-12V**
- ✔ For mobile and base use!
- ✔ **Free car adapter included!**

Charge nearly all of your amateur radio battery packs with it, plus more.....
Cellular, Notebook Computer, Two-Way Radio, and more!

External magnetic temperature probe!

The breakthrough adjustable contacts make it truly universal!

Powerful magnet that will hold your battery pack in place!

The MH-C777 will not only charge your battery but also condition it!

NiMH BATTERY PACKS

- ✔ **New technology**
- ✔ **No** memory effect
- ✔ 50-100% **more** capacity than same size NiCad
- ✔ **Light** weight
- ✔ Flat Discharge Curve
- ✔ **Small** Size
- ✔ Environmental **friendly**
- ✔ Many **other** models available
- ✔ **One** Year Limited Warranty for all battery packs

1000mAh

MH-PB-34
For Kenwood TH-79/22/42
900mAh, 9.6v

1800mAh

MH-FNB-V47
For Yaesu FT-50R/10R/40R
1800mAh, 7.2v

1000mAh

MH-BP-180
For Icom T7A/T22A/W32
1000mAh, 7.2v

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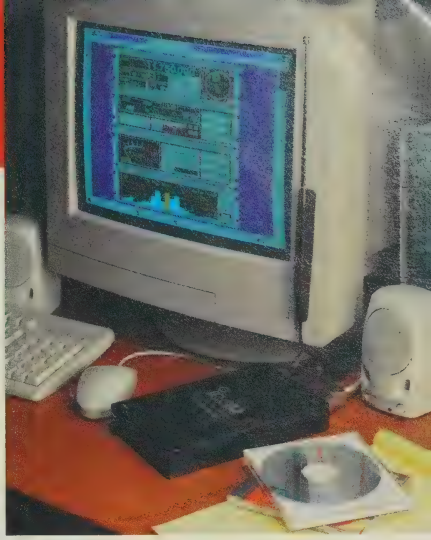
ICOM Leads the Way with New PC Ready Scanners and Receivers



The whole world in a little black box! ICOM's newest receiver is a PC-external peripheral (no internal PC installation required). It's true plug and play world band convenience!

- 100% PC Controlled
- Wide Band 100 kHz – 1.3 GHz*
- All Mode AM, FM, WFM, SSB, CW
- 3 Selectable User Screens
- Unlimited Number of Memory Channels
- Runs on Windows® 3.1 or 95

PC Ready!

Plug and play. Software, 6-pin RS-232C cable, antenna and AC adapter are **included**.

NEW!

IC-PCR1000

External, PC-controlled Wide Band Receiver

IC-R8500

The Expert's Choice is Also Easy to Use

ICOM's latest base station is a handsome rig that will look as good in the home living room as in the listening shack. Built ready for easy PC control, the IC-R8500 is only a cable away from software customized operation. ☞

Plug and play. Standard third party serial cable required for PC connection.

PC Ready!

- Wide Band 100 kHz – 2 GHz*
- All Mode AM, FM, WFM, SSB, CW
- Commercial Grade
- Built-in CI-V Command Control
- Built-In RS-232C Port
- 1000 Memory Channels
- IF Shift & Noise Blanker
- Audio Peak Filter (APF)
- Auto Frequency Control
- 7 Different Scan Types

Uses "AA" Alkalines or Ni-Cds

☞ One of the IC-R10's great features is the **SIG NAVI scan**. While you listen to a paused frequency, the SIG NAVI scan looks for the next busy frequency within 100 kHz.

PC Ready!

Select ICOM options required, depending on PC control or cloning task desired.

IC-R10

Catch More Listening Excitement on the Go

Whether you're new to scanning or a longtime listener, this rugged little handheld delivers.

- Wide Band 100 kHz – 1.3 GHz*
- All Mode, Including SSB
- PC Cloneable
- 1000 Memory Channels
- "Real-Time" Band Scope
- 7 Different Scan Types
- **EASY MODE** for Beginners
- Uses "AA" Ni-Cds (included) or Alkalines – your choice

ICOM® RECEIVERS

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IC-706MKII
HF+6M+2M • 100 Watts (HF+6M), 20 watts (2M) • All Mode • Remoteable Front Panel* • DSP* • Up to 3 Front Panel Filter Selections* • 2 Antenna Connectors

*Optional equipment required

IC-707
HF• 100 Watts • All Mode • 100% Duty Cycle • Rugged Construction • Large, One Function Keys and Dials • Front Facing Speaker • Compact Size • ICOM's Most Affordable HF

IC-746
HF + 6M + 2M • 100 Watts on All Bands • All Mode • IF-DSP • Noise Reduction • Auto Antenna Tuner • Band Scope • 3 Antenna Connectors • Twin Passband Tuning • Auto Notch Filter • Audio Peak Filter • RF Speech Processor* • Up to 7 Front Panel Filter Selections* (3 filter slots)

*Optional equipment required

IC-756
HF+6M • 100 Watts on All Bands • All Mode • IF-DSP • Noise Reduction • Twin Passband Tuning • Auto Antenna Tuner • True Dual Watch • Real Time Band Scope

IC-775DSP
HF • 200 Watts • Built-In Power Supply • All Mode • IF-DSP • Noise Reduction • Auto Antenna Tuner • Auto IF Notch Filter • Level/Width Variable Noise Blanker • PSN Modulation • Twin Passband Tuning • Audio Peak Filter • 3 Antenna Connectors • Dual Receiver • Twin Tuning Knobs

IC-781
HF • 150 Watts, Built-In Power Supply • All Mode • Complete & Fully Equipped: No Options Needed, Not Even Filters • CRT with Real Time Band Scope

IC-PW1
1 KW Amplifier • HF + 6M • Removable, Remoteable Control Head • Auto Band Changing • 4 Antenna Connectors • Auto Antenna Tuner • 3 Cooling Fans

See the IC-PW1 at Dayton '98

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www.icomamerica.com

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HANDHELDS

IC-T2A

2 Meter Single Bander • 4.5 W • Rugged Aluminum Chassis & Polycarbonate Case • Built-In Tone Squelch with Pocket Beep and Tone Scan • 8 Programmable Keys • 43 Memory Channels • Uses 8 "AA" Ni-Cd (included) or Alkaline Batteries • Affordable • 2.3"(W), 5.5"(H), 1.3"(D), 10.9 oz

IC-T22A/IC-T42A (2M/440 MHz)

Single Bander • Fun, Shirt Pocket Small and Easy to Use • Large Alphanumeric Display • Wide Receive Coverage, Including Air Band • 5 W @ 13.5 V (3 W Out of Box) • Air Band Receive • 80 Memory Channels (40 w/Alpha Display) • 2.3"(W), 4.3"(H), 1.1"(D), 10.9 oz

IC-T7AHP

2 Meter/440 MHz Dual Bander • Dual Bands at a Single Bander Size & Price • Very Easy to Use– No Function Key • Works One Band at a Time, Switch Between Bands with One Touch of the Band Key • Now 4 W (2M)/3 W (440) Out of the Box with BP-173 • "Intuitive" Help Display • CTCSS Encode/Decode• Very Affordable • 2.5"(W), 4.8"(H), 1.1"(D), 11.3 oz

IC-Q7*

2 Meter/440 MHz Dual Bander • Extended Rx 30-1300 MHz (cellular blocked), Airband Receive Broadcast FM and AM Receive (most TV stations, too) • 300 Mw Transmitter • 200 Memories • Uses "AA" Alkaline or Ni-Cd Batteries • Rugged Construction • Tone Squelch • Easy to Use • Splash Resistant • 6-25 KHz Channel Step • Full Scanning Capability • Receiver Attenuator • Power Save Feature • 2.3"(W), 3.4"(H), 0.98"(D) (Shown with optional antenna)

IC-W32A

2 Meter/440 MHz Dual Bander • 5 W Out of the Box • No Function Key • PC Programmable • 200 Memories with Alphanumeric Display , Messaging & Paging • "Intuitive" Help Display • Backlit Display and Keypad • Wide Band RX (Including Air Band) • V/V, V/U, U/U Operation with VHF/UHF Tuning Knob Exchange • Encode/Decode • PC/Radio-to-Radio Cloning • 2.2"(W), 4.9"(H), 1.2"(D), 12.0 oz

IC-T8A

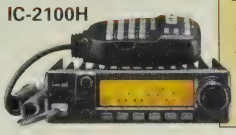
6 Meter/2 Meter/440 MHz Tri Bander Handheld • Worlds Smallest! • Super Thin Profile/Lightweight Design • Up to 5 Watts Power on All Bands (13.5 V DC) • 4.5 Watts Out of Box with Supplied BP-200 Battery • One-Touch Band Switching • Ni-MH Powered! • RX (MHz): 50-54 (6 meters), 118 - 174 (2 meters), 400 - 470 (440 MHz) Broadcast FM and AM Receive (most TV stations, too) • Airband Receive • 123 Memory Channels with 10 Scan Edges and 1 Call for Each Band • MIL SPEC 810 C/D/E • Tone Squelch with Pocket Beep • Backlit Display with Timer • Built in Guide Function • JIS Grade 4 Water Resistance • Wall Charger Included • DTMF Encoder with 9 DTMF Memories • Handheld to Handheld Cloning Capability or PC Programming Capability** • 2.3 (W), 4.3 (H), 1.2 (D), 9.9 oz

MOBILES

Optional Infrared Wireless Mic

*The HM-90 Infared optional wireless mic works with the new IC-2100H, IC-207H** and the more advanced IC-2710H. Enjoy cable-free operation on the GO!*

IC-2100H



2 Meter • 55/10/5 Watts (selectable) • TX 144-148 MHz • RX 136-174 MHz[1] • 75 db/93 db IMD • 113 Memory Channels • Heavy Duty, One Piece, Die Cast Aluminum Chassis • MIL SPEC 810 C/D/E Shock/Vibration • Front Panel Programmable Alphanumeric Display • PC or Radio to Radio Cloning** • DTMF Microphone (HM-98S) • CTCSS Encode/Decode Standard – 50 Tone Frequencies • Independently Programmable Tx/Rx • Tone Scan • Auto Repeater with Busy Lockout • Priority Watch (3 types) • 5.5"(W) x 1.6"(H) x 7.1"(D), 2 lb 10 oz

IC-2710H

2M/440 MHz Advanced Dual Bander • 2M (50 W)/440 MHz (35 W) • Detachable Control Panel** • Fast Scanning • 220 Memory Channels • PC Programmable • CTCSS Encode (decode optional) • RF Attenuator • 8 DTMF Memory Switches • v/v, u/u Simultaneous RX • Built-In Duplexer • 3 Selectable Power Levels: 50 (35), 10, 5 • 5.5"(W), 1.6"(H), 8.4"(D), 3.1 lb

IC-207H

2M/440MHz Dual Bander • 2M (45 W)/440 MHz (35 W) • Super Compact Detachable Control Panel** with Big Keys, Big Knobs and a Big Display • Work One Band at a Time • 9600 Baud Ready • Wide Band RX (Includes Air Band) • CTCSS Encode/Decode • Very Affordable • 5.5"(W), 1.6"(H), 8.1"(D), 2.6 lb

BASE STATIONS

IC-821H

2M/440 MHz Advanced Satellite & Digital Base Station • All Modes • Easy to Use! • Continuous Adjustable Transmit Power • Sub Band Transmit • 9600 Full Compatibility Out of the Box • 160 Memories • Noise Blanker & IF Shift on Main & Sub Bands (independent main/sub RX) • Built-In Electronic Keyer • Satellite Tracking with Doppler Correction • Compact! 9.5"(W), 3.7"(H), 9.4"(D), 11.0 lb

"By far the easiest to use satellite radio on the market today. In less than 10 minutes after unpacking the 821H, I was on the air at 9600 baud with KO-23"
– Michael Wyrick, N4USI, AO-27 Control Operator

VHF & UHF

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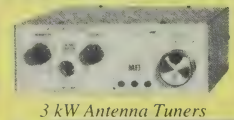
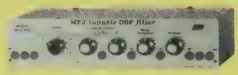
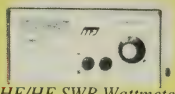
MFJ

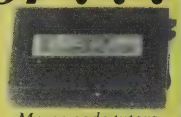
SWR Analyzers

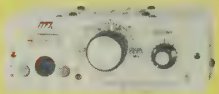

3 kW Antenna Tuners

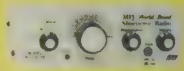
300 Watt Antenna Tuners


DSP Filter

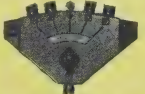

VHF/HF SWR Wattmeters

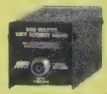

Morse code tutors


CW/SSB Transceivers

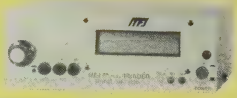

Receiver Kits

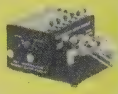
Mobile Antennas


Antenna switches


Dummy Loads

Multimode TNCs


Shortwave


CW Keyers

High Current DC Outlets

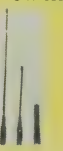
Data Radios

24/12 Hour Ham Radio Clocks

Noise Canceller

2 Meter Antennas

Handheld Accessories



Vertical Antennas

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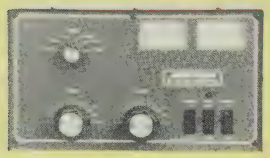

800 Watts . . . (4) 811A Tubes

High Power Accessories

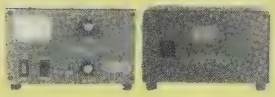
1000 Watts (1) 3-500Z Tube

Legal Limit (2) 3-500Z

Legal Limit (2) 3CX800A7

Legal Limit (1) 3CX1200A7

Legal Limit (1) 3CX1500A7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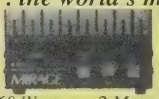
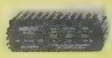
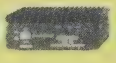
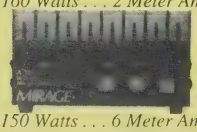

160 Watts . . . 2 Meter Amp


2 Meter 35 Watts


2 Meter/35W 440 MHz/45W

2 Meter 100 Watts


150 Watts . . . 6 Meter Amp

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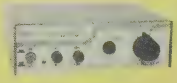
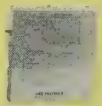
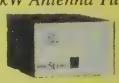
300 Watt Ant. Tuners

2 kW Antenna Tuners


CW Keyer/Paddle


Dummy Loads


Power Supplies

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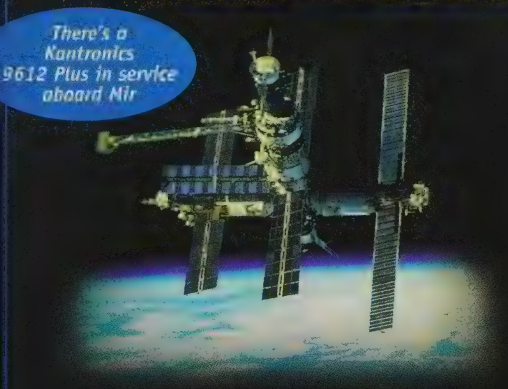
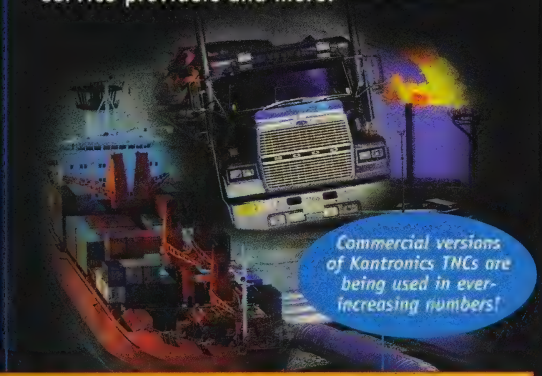
Get on the Outernet!™



There's a world of digital communications fun and adventure that *only hams can enjoy* and Kantronics makes it possible for you to explore it. No matter if you call our products TNCs, wireless modems or digital controllers, the "Outernet™" offers a world of adventure, including satellite communications, APRS®, DX spotting, BBS operations, WEFAX, EMWIN, TCP/IP links, remote control and sensing, telemetry, HF e-mail with ham gateways or commercial service providers and more!



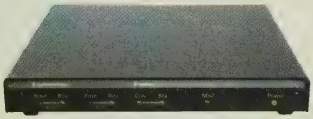
Kantronics offers a number of ways to enjoy the growing field of digital communications. Choose the unit that suits your interests and budget. All Kantronics units come with a one-year limited warranty and can be upgraded when firmware updates become available.

KPC-3 Plus

8.2 Firmware now with Advanced GPS/APRS UI digipeating available for all 4 models!

- 1200 bps - Now with more features!
- Packet, GPS/APRS, Host, KISS and WEFAX modes, use with EMWIN
- Personal Mailbox (PBBS) now supports multiple calls
- Remote access, sensing and control with two A/D and two control lines
- PBBS 100k, expandable with optional 512k RAM
- Uses external power or internal 9v battery
- NEWUSER mode and online help

KPC-9612 Plus



Optional 1200 or 9600 third port expansion boards now available

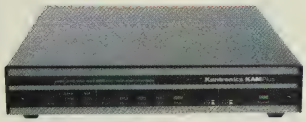
- 1200 port AND second port of 4800 ~ 38,400 bps
- Most modes/capabilities of the KPC-3 Plus and POCSAG (paging)
- Unique design allows the addition of *another port, high or low speed*
- Remote access, sensing and control capability
- Telemetry transmission capability

KAM '98

New!

- **Single Port** multimode TNC for HF or VHF use
- All the modes of KAM Plus with addition of A/D inputs/TTL outputs
- HC11 for more processing power to accommodate future upgrades
- Wider range of speeds; use 1200bps packet on 10 meters

KAM Plus



- Dual port VHF/HF (1200/<=300 bps) multimode TNC
- Packet, GPS/APRS, Host, KISS, WEFAX, CW, RTTY, AMTOR, PACTOR, G-TOR™, TOR, and Free Signal Detection for HF e-mail
- 100k personal mailbox standard, expandable with optional 512k RAM
- Remote access capability
- NEWUSER mode and online help

Kantronics

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The Cool New Look in Mobile Communications.

Kenwood's new TM-V7A FM dual-band (144MHz/440MHz) transceiver with its cool-blue reversible LCD heralds a new age in ergonomic design. What's more, the TM-V7A boasts advanced features that make mobile communications as sharp as the cool-blue look.

TM-V7A Dual Band Transceiver

If the TM-V7A could do any more for you as a mobile radio, it would be holding a conversation with you. From the **blue positive/negative display modes** that optimize lighting conditions, to the multi-dimensional **Five-in-one programmable memory system** that stores five different operating profiles, the TM-V7A incorporates a comprehensive intelligence that will bring you an entirely new mobile operating experience.

A world first **blue LCD front panel** utilizes a dot-matrix format for crisp, high-resolution information display in either positive (white background/blue characters) or negative (blue background/white characters) modes to suit ambient lighting conditions.

The 'Five-in-one' user interface memory system allows you to configure five unique 'personalities' into the TM-V7A to suit various operating requirements, and access them at the push of a button. Each 'personality' program includes positive/negative display mode, dimmer level, frequency range and memory mode– great for families who use the same radio.

This user interface provides access to a set of features with extraordinary range and depth. You have up to **280 multi-function memory positions** that each store TX/RX frequencies, frequency step, and DTSS (Dual-Tone Squelch System) or CTCSS (Continuous Tone Coded Squelch System) tone frequency. If you use the **Memory Name function** to store each memory with a full alphanumeric identifier, there are up to 180 channels available. You can receive two frequencies simultaneously on the same band (VxV or UxU) or split across both bands, and cruise the frequencies with a powerful new scanning system that provides a **visual graph** of the frequency band activity. The **Auto-simplex checker** (ASC) function can also automatically sense if you can switch from a repeater to simplex operation.

All of these advanced features are combined with Kenwood's unmatched **AIP (Advanced Intercept Point)** circuitry for excellent selectivity and sensitivity. The **mini-DIN plug** for 1200/9600 bps data transmission will allow you to operate voice and data at the same time, a Kenwood exclusive. The compact, **quick-release front panel** for remote positioning and **commercial-grade design with heavy duty heatsink and rugged construction** make the TM-V7A the ultimate choice for mobile communication.

- **Full band scan, program band scan, memory scan with channel lock-out, MHz scan and call scan with TO (time operated) or CO (carrier operated) resume modes**
- **Automatic band change**
- **Selectable frequency step (5, 6.25, 10, 12.5, 15, 20, 25 or 50 kHz)**
- **Wireless remote control function**
- **Voice synthesizer (requires VS-3 option)**
- **Separate speaker terminals for each band**
- **Supplied MC53DM multi-function backlit microphone with DTMF**
- **Cross band repeater function**
- **Guide functions**
- **Built-in duplexer**
- **Built-in CTCSS encode and decode**
- **CTCSS tone scan**
- **APRS™ ready**
- **10 DTMF memory (16 digits)**

ISO 9001
JQA-1205

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Amateur Radio Products Group
98ARD-1734-SCV

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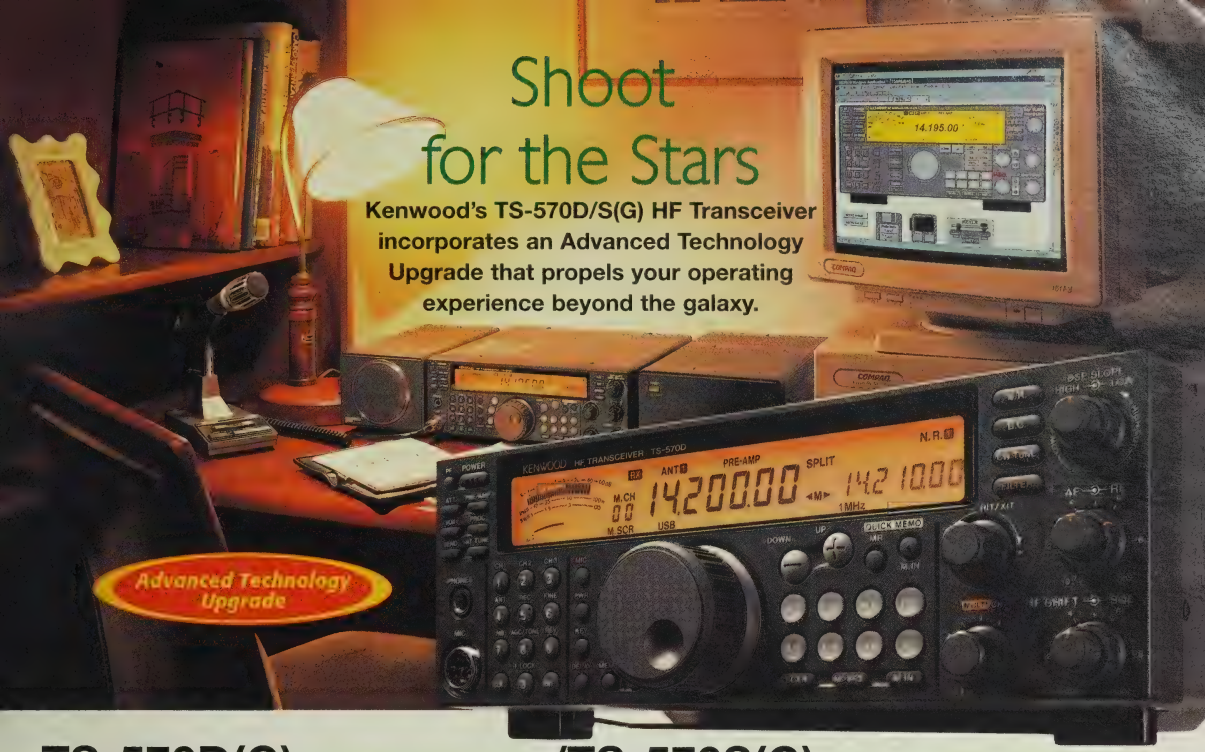

TS-570D(G) HF TRANSCEIVER/TS-570S(G) HF + 6M TRANSCEIVER

Kenwood has not been standing still since the introduction of the TS-570D/S HF Transceiver last year. Now you can command even more of Kenwood's advanced DSP technology with the G model.

The **DSP** filters and extracts signals with digital technology that is unmatchable with standard analog circuits. It provides **CD-class transmit and receive audio quality** that can be shaped to your needs, and two powerful noise reduction systems: **Line Enhancer Method** for SSB/AM modes, and **Speech Processing by Auto Correlation** (SPAC) for CW mode. DSP also enables the **CW-Auto Tune** feature that automatically zero-beats CW signals.

The **Extensive Memory Functions** provide a bank of 100 memory positions split into 90 standard channels for general operation and 10 for programmable VFO, programmable scan and long-term memory. Memory contents can be scrolled, copied or locked out. In addition there are **5 quick memories** for storing frequencies and modes on the fly, perfect for the busy DX contester.

The powerful **Menu System** incorporates **46 menu features** and an **on-line guide** for instant reference. The **large amber backlit LCD display** provides 4 light levels for clear readability under any lighting conditions.

The TS-570D/S has no shortcomings in the construction and performance area. The **continuous-duty 100 watt transmitter** incorporates a large heavy-duty heat sink with integrated cooling fan for non-stop operation even under extreme environmental conditions. The **wide-band receiver** is rock-stable from 500 kHz through 30 MHz with **dual pre-amps** and **dual bandpass filters** for exceptional selectivity and sensitivity.

With the features and performance of a high-end radio integrated into an affordable mobile-size package, the TS-570D/S is the perfect choice for the field or to build a full station around at home.

- Beat cancel
- 2 position antenna switch
- CW auto tune adjust (a world's first)
- Channel scan, program band scan, memory scan with channel lock-out and group channel scan, all with TO (time operated) or CO (carrier operated) resume modes
- Compact 10-5/8 inch by 3-3/4 inch front panel size for any travel or installation requirement
- Preset auto antenna tuner with 18 sub-bands
- Variable electronic keyer (0 and 100 wpm)
- Packet and FSK features
- RCP-2 software for PC-based display and memory configurations available via the Internet
- Full functionality on 6M (TS-570S) including DSP, 100 watts output and preset Auto Antenna Tuner
- QRP output adjustable from 5 to 100 watts

TS-570D/S (G) new features

■ TX sound quality monitor with 9-step monitor volume for absolute control over voice quality ■ NR1 (SSB) is operator controllable in 9-step increments, or automatically tracks input signal strength ■ New CW DSP Filters (80 Hz, 150 Hz and 500 Hz) give you a total of 11 user-selectable filters ■ NR1 and NR2 settings can be re-configure automatically when changing mode groups (SSB/AM/FM to CW/FSK) ■ Manual weight feature (with built-in electronic keyer) for adjusting the relative length of dots and dashes in 16 steps between 1:2.5 and 1:4.0 ■ Equalize receive signals, and use different settings for both TX and RX ■ "One-touch" DSP filter wide mode allows 'resurfacing' to check the band conditions when operating in narrow mode ■ Dual selectable Beat Cancel (BC) works against intermittent beat interference (except in CW mode) ■ CW auto tune mode links only with the RIT frequency without changing the transmit frequency.

Advance Technology Upgrade is available in new production models and for pre-existing TS-570D/S; contact you dealer for details.

ISO 9001
JQA-1205

Communications Equipment Division
Kenwood Corporation
ISO9001 certification

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Amateur Radio Products Group
98ARD-1731-SCV

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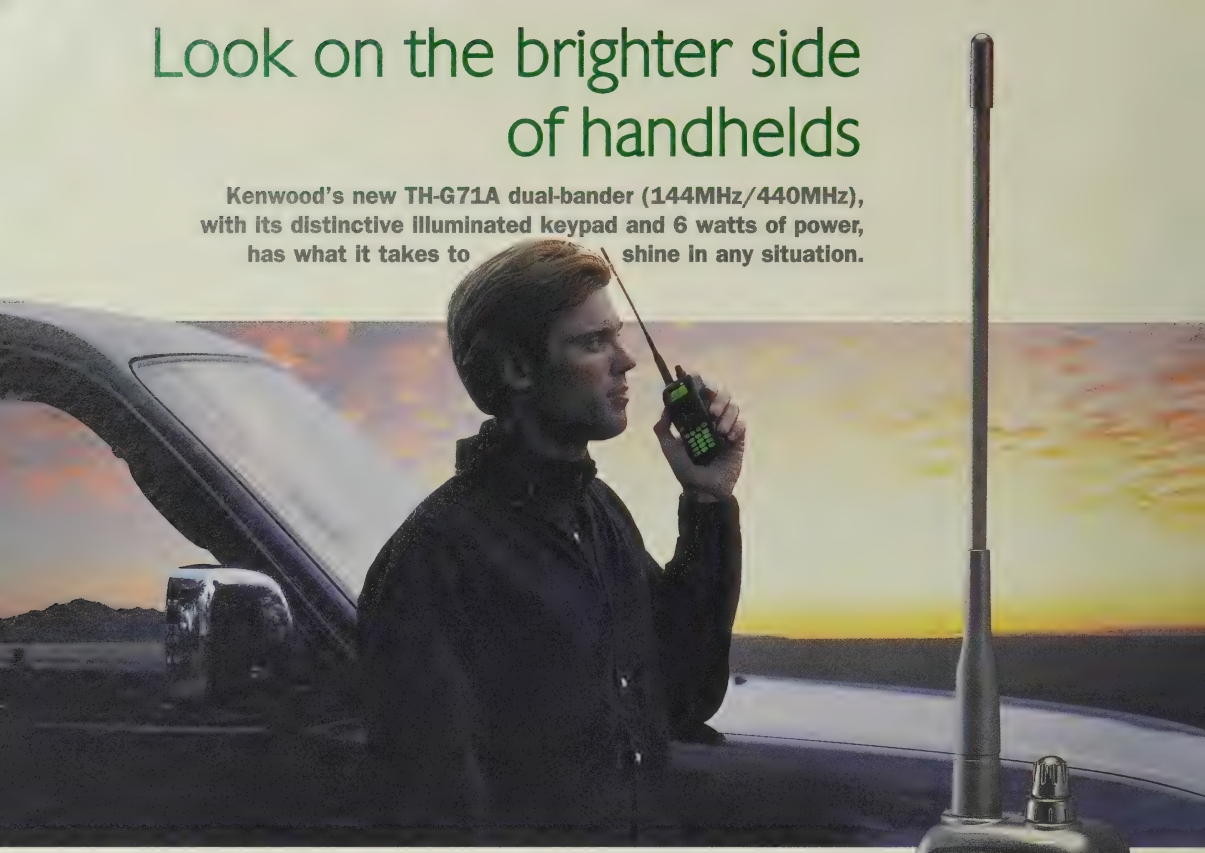
Look on the brighter side of handhelds

Kenwood's new TH-G71A dual-bander (144MHz/440MHz), with its distinctive illuminated keypad and 6 watts of power, has what it takes to shine in any situation.



TH-G71A 144/440/MHz FM DUAL BANDER

If you're looking for a compact dual-bander with all the right features, yet without the price tag that usually goes with high performance, there's no better choice than the TH-G71A.

Just hold it in your hand and it's immediately clear how well our new handheld transceiver is engineered. The ergonomic design, **illuminated keys** and **backlit display** all combine to make operation a breeze. As does the menu mode, which allows you to customize the TH-G71A by adjusting all major settings to your choice. Besides being easy to use, it also boasts extraordinary power – up to 6 watts (VHF) or 5.5 watts (UHF) of RF output (selectable) with its **high-performance antenna.** The speaker provides **powerful, refreshingly clear audio.**

Of course, power is only part of the picture. Features count. And you can count on the TH-G71A to offer what you'd only expect to find in far more expensive HTs. There are **200 memory channels** – allowing you to store transmit and receive frequencies independently. Memory data can even be edited and stored on your PC. Multiple scan functions are available, including programmable band scan, memory scan with memory channel lock-out, MHz scan and call scan. For each band there are TO (time-operated), CO (carrier-operated) and seek scan resume modes. With the Memory Name function you can choose to identify each channel with up to **6 alphanumeric characters.** DTMF memory and CTCSS tone encode/decode are provided.

The TH-G71A also scores well for stamina and reliability, boasting long battery life – thanks to a variety of power-saving features – and **MIL-STD 810E** compliance for rain & shock resistance. So there's no need to go easy on this dual-bander. It's built better and brighter in every way.

- **6W (VHF), 5.5W (UHF) at 13.8V DC**
- **PC programmable**
- **200 memory ch. with alphanumeric display**
- **MIL-STD 810E (rain & shock)**
- **CTCSS tone scan**
- **Wide-range coverage (incl. aircraft receive)***
- **DTMF memory (10 ch. up to 16 digits)**
- **Multiple scan modes**
- **Key illumination**
- **High-performance antenna**
- **HI/LOW/EL power output selectable**
- **TM-V7A remote control (DTMF remote)**

** Specifications are guaranteed for Amateur Bands only*

ISO 9001
JQA-1205

KENWOOD
Amateur Radio Products Group
97ARD-1677-SCV

KENWOOD COMMUNICATIONS CORPORATION
AMATEUR RADIO PRODUCTS GROUP
P.O. Box 22745, 2201 E. Dominguez Street
Long Beach, California 90801-5745, U.S.A.
Customer Support/Brochures (310) 639-5300

INTERNET
Kenwood News & Products
http://www.kenwood.net
Kenwood Bulletins
ftp://ftp.kenwood.net

You Have Reached Cruising Altitude

There is little to beat the sheer pleasure of owning and driving a performance car. But an alternative way to enjoy first-class convenience on the road is Kenwood's new TM-G707A, an FM dual-bander (144MHz/440MHz) expressly tailored for your cruising comfort.

TM-G707A FM DUAL BANDER

Power up and you're greeted by the welcoming glow of an amber-colored LCD. You can always be sure of a friendly reception from Kenwood's TM-G707A, an FM dual-band transceiver that is a joy to use.

For some drivers, visibility is everything. That's why the TM-G707A has an extra-large display. Capable of showing up to 7 large characters, the **high-visibility amber LCD** features a 4-step dimmer control to suit all driving conditions, day or night. A convenient touch is the automatic brightness control during operation.

The TM-G707A is simple and straightforward like a car stereo, thanks to **Easy Operation** mode. You just choose a frequency and press one of the 3 quick memory keys to save it. A light touch on the same key is all that is needed for recall. And with the **Five-in-one programmable memory system,** you can store five operating profiles - complete with frequency range, dimmer level, and other details - ready for instant recall at the push of a button.

Another convenience that is especially welcome on the road is the **Memory Name** function. This allows you to identify each memory position with up to 7 alpha-numeric characters. You can also switch instantly between the frequency and Memory Name displays.

Optimized convenience goes hand in hand with polished performance and a wide range of advanced features, such as a built-in **CTCSS encoder/decoder, built-in duplexer** and **priority scan.** The front panel features a 6-pin **mini DIN connector** for either standard 1200bps or 9600bps high-speed packet or APRS communications. Also, **180 multi-function memory channels** are available for storing such data as transmit and receive frequencies independently (thus allowing split-frequency operations), frequency step, and tone frequency. Among the many options available is a **quick-release detachable front panel kit** for anti-theft protection.

There's an open road ahead for the future of mobile communications, and Kenwood's TM-G707A is showing the way.

- **180 memory channels with 7 character alphanumeric display**
- **Power output 50W VHF, 35W UHF**
- **Wide range coverage (including aircraft receive)**
- **Superior intermodulation rejection characteristics**
- **Heavy-duty heat sink construction**
- **PC programmable**
- **Supplied MC-53DM multi-function backlit microphone with DTMF**
- **Full band scan, program band scan, memory scan with memory channel lock-out, MHz scan and call scan with TO (time-operated) or CO (carrier-operated) resume modes**
- **CTCSS tone scan**
- **Voice Guide (requires VS-3 option)**
- **Selectable frequency step (5, 6.25, 10 12.5, 15, 20, 25 or 50kHz)**
- **Incremental MHz Key**
- **AIP (Advanced Intercept Point)**
- **Memory shift (odd splits)**
- **S-meter squelch**
- **Auto repeater offset (144MHz)**
- **Power-on message**
- **3-position RF output power control**
- **Time-out timer (TOT)**
- **Auto power-off circuit**

ISO 9001
JQA-1205

Communications Equipment Division
Kenwood Corporation
ISO9001 certification

KENWOOD
Amateur Radio Products Group
98ARD-1733-SCV

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INTERNET
Kenwood News & Products
http://www.kenwood.net

Seeing is Transceiving

Portable SSTV is here! Kenwood's new VC-H1 Visual Communicator combines an image-scan converter, CCD camera and LCD monitor in a compact battery-operated unit. Simply hook it up to your Kenwood transceiver to start sending and receiving color images over the air.

VC-H1 Visual Communicator

Ideal for outdoor SSTV

Until now, for anyone interested in SSTV (slow-scan television), portability has not been an option. But thanks to component miniaturization the VC-H1 is not only small enough for handheld use but it runs off 4 AA batteries so you can take it anywhere. This makes it ideal for field days, special events, disaster communications and even fishing trips.

Full compatibility

The VC-H1 can be connected to any transceiver with just a cable, and it offers full compatibility with all of the standard SSTV formats. Uploads/downloads are quick and easy; the images are also sharp and clear.

All-in-one design

In addition to the detachable 1/4-inch CCD camera, the VC-H1 features a 1.8-inch color TFT (thin film transistor)-type display. As well as viewing incoming pictures, you can review your own prior to transmission. The built-in microphone & speaker can be used in place of a separate speaker-microphone for your transceiver.

Image memory

Up to 10 pictures can be stored in memory. This allows you to compare and pick the best shot to send. You can also store incoming pictures and protect them from unintentional deletion.

Computer connectivity

One of the great features of the VC-H1 is the ability to work with a personal computer. Hook it up to the RS-232C port on your laptop using the optional connection kit (includes Microsoft® Windows® 95 software) and you can save pictures (in JPEG format) that you send and receive. You can then cut and paste using standard graphics software, or even superimpose your own text. What's more, you can actually control the VC-H1 from your computer.

Call sign superimpose

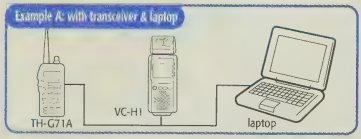
AF mute

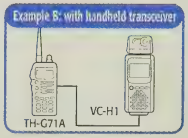
Auto power-off

SPECIFICATIONS

• Terminals : Data I/O (for transceiver), Video in, Video out, COM (for computer),DC IN (4.8 ~ 7.0V) • Dimensions, projections not included (WxHxD): 2-5/8 x 1-3/8 x 6-3/4 in (62 x 30 x 160 mm)

Specifications are subject to change without notice.
Screen-shot photographs are simulated.
Microsoft and Windows are registered trademarks of Microsoft Corporation





TH-G71A
144/440MHz
FM Dual Bander

- 6W (VHF), 5.5W (UHF)
- PC programmable
- 200 memory ch. with alphanumeric display
- MIL-STD 810E (rain & shock)
- CTCSS tone scan
- DTMF memory (10 ch. up to 16 digits)
- Wide-range coverage

ISO 9001
JQA-1205

Communications Equipment Division
Kenwood Corporation
ISO9001 certification

KENWOOD
Amateur Radio Products Group
98ARD-1732-SCV

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BIRD

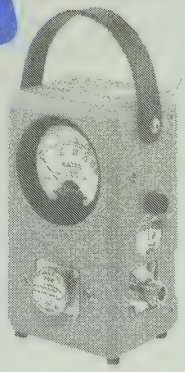
Model 43 Directional Wattmeter

This low-cost Thruline Directional Wattmeter has a history of reliability, durability and flexibility. It is a well engineered, portable insertion-type meter that measures forward and reflected CW power in coaxial transmission lines. It gives accurate RF power flow readings under any load conditions.

Model 43 is comprised of a line section and a direct-reading 3 scale meter in a rugged, corrosion-resistant aluminum case. Quick Change (QC) type connectors and a full range of plug-in measuring elements are available. (See the chart for the most popular elements. Others are available on special order.) Store two extra elements in the housing. The shock-mounted 30-microampere meter has 3 expanded scales of 25, 50 and 100 unit calibrations. It comes with type SO-239 QC connectors, but others are available. Please specify when you order.

PEP Modification Kit Model 4300-400

Your existing Bird 43 meter can be upgraded to a PEP reading meter. Order the 4300-400 modification kit. Easy installing procedures are included for most versions of the Model 43.



Model 43P Peak Reading Wattmeter

The Model 43P is a peak-reading version of the popular Model 43. The peak reading option has been installed in one of the spare element holes on the side of the meter. The meter reads CW with the switch out and PEP when the switch is in. Requires a 9 VDC battery. The frequency range and power levels are determined by the element used. No special elements are required. The meter comes with SO-239 QC connectors installed. Others are available.

Accessories

The most popular watt-meter accessories are:

- CC-1 Meter case. Space for 6 elements.
- EC-1 Element case. Space for 12 elements.

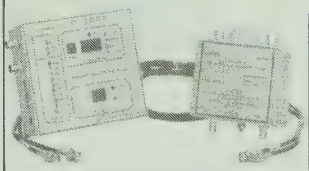
Bird Standard Elements

Power	2-30 MHz	25-60 MHz	50-125 MHz	100-250 MHz	200-500 MHz	400-1000 MHz
5 watts		5A	5B	5C	5D	5E
10 watts		10A	10B	10C	10D	10E
25 watts		25A	25B	25C	25D	25E
50 watts	50H	50A	50B	50C	50D	50E
100 watts	100H	100A	100B	100C	100D	100E
250 watts	250H	250A	250B	250C	250D	250E
500 watts	500H	500A	500B	500C	500D	500E
1000 watts	1000H	1000A	1000B	1000C	1000D	1000E
2500 watts	2500H		2500B	2500C		
5000 watts	5000H					
10000 watts	10000H					

Watt Meters

RF Applications

RF Applications watt meters have a VSWR alarm that will drop out an amplifier under high VSWR conditions.



P-3000 HF Digital Watt Meter

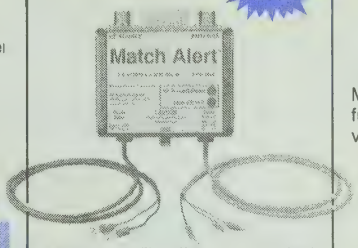
A remote coupler design with a power rating of 15 to 2950 watts and a VSWR from 1.0:1 to 19:1. A 5 KW model is now available. **HRO Price $259.95**

P-2000A HF Digital Watt Meter

Uses a combination of digital microprocessor technology and analog panel meters. Has an expanded VSWR scale and settable VSWR alarm. Covers 1.8 to 30 MHz up to 2000 watts. **HRO Price $299.95**

VSWR Monitor

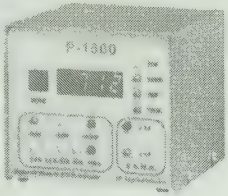
MatchAlert™ NEW!



Match Alert™ offers economical protection for HF transmitting systems. The microprocessor-based monitor gives a visual and electrical alarm if a preset VSWR level is exceeded. Eight levels are dip-switch selectable. Match Alert covers 1.8 to 30 MHz and is rated at 3000 watts. Requires 11 to 16 VDC. A power supply is not provided. A form-C relay contact rated at 1 ampere is available via a three foot wire harness. **HRO Price $99.95.**

P-100A Digital Watt Meter

Display and control functions are similar to the P-2000A. Uses coaxial line sections and sensor elements from Bird® or Coaxial Dynamics® to measure power and VSWR over a wide range of power and frequencies. **HRO Price $239.95**



P-1500 HF Digital Watt Meter

Has a built-in coupler designed for 1.8 to 30 MHz with a power rating of 15 to 1500 watts and a VSWR from 1.0:1 to 19:1. **HRO Price $219.95**

P-1 HF Wattmeter with Serial Interface

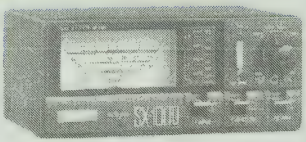
Measures power and VSWR from 1.8 to 30 MHz. The values are accessible via an RS-232 serial interface. **HRO Price $1899.95**

P-2000CW Audible HF Wattmeter

Provides power and VSWR measurements from 1.8 to 30 MHz. The measurements are reported in Morse Code. Adjust CW speed 5 to 40 wpm, and normal or abbreviated CW is selectable. Tuning modes make VSWR and power optimization simple for the sight impaired operator. **HRO Price $249.95**

DIAMOND

Diamond RF SWR / watt meters cover the complete range of amateur applications.

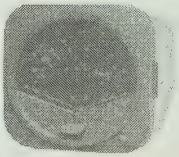


Diamond SWR / Watt Meters

Model	Freq MHz	Power Ranges	Connectors	HRO Price
SX-100	1.6-60	30/300/3KW	SO-239	$129.95
SX-200	1.8-200	5/20/200	SO-239	$99.95
SX-400	140-525	5/20/200	SO-239	$109.95
SX-600	1.8-160 140-525	5/20/200	SO-239	$159.95
SX-1000	1.8-160 430-450 800-930 1230-1300	5/20/200	SO-239 Type N Type N Type N	$199.95

- Illuminated meters.
- Require 12 volts DC.
- Low insertion loss generally less than 0.2 dB in HF range and 0.3 dB at higher frequencies.
- Power measurement accuracy is generally ±10% on the higher power ranges and ±5% on the lower ranges.
- Some have remote sensors for power pick-up.
- Low loss SO-239 connectors are used except for the high frequencies as noted in the table.
- Measurements are forward power, reflected power, SWR &, on selected frequencies, PEP monitor.

DAIWA

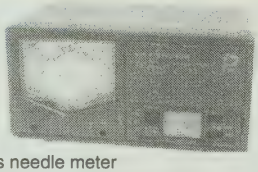


CN-460M
- Compact
- Cross Needle Meter
- Mobile / Base Use

	CN-410M	CN-460M	CN-465M
Frequency	3.5-150 MHz	140 - 450 MHz	140-450 MHz
Power Range	15-150 W	15-150 W	15-150 W
Power Rating	150 W	150 W	150 W
SWR Detection	3 W minimum	3 W minimum	3 W minimum
HRO Prices	$99.95	$89.95	$99.95

	DP-810	DP-820N	DP-830
Frequency	1.8-150 MHz	140-525 MHz	1.8-150 MHz 140-525 MHz
Power Range	0 - 1.5 kw 0 - 150 MHz	0 - 1.5 kw 0 - 150 MHz	0 - 1.5 kw 0 - 150 MHz
Power Rating	1.5 KW 150 W	1.5 KW 150 W	1.5 KW 150 W
Sugg. List	$249.95	$279.95	$369.95

DP-800 Series
- Large LCD display
- RMS and PEP readings
- Bargraph display
- Audible Beeps



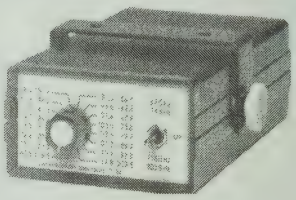
CN-101
- Large cross needle meter
- Forward / reverse read simultaneously
- PEP monitor function

	CN-101
Frequency	1.8 - 150 MHz
Power Range	15/150/1.5 KW
Power Rating	1.5 KW(1.8-60MHz) 1 KW (144 MHz)
SWR Detection	4 W minimum
HRO Price	$89.95

Encoders / Decoders

COMMUNICATIONS SPECIALISTS, INC.

Tone encoders and decoders from Communication Specialists are just what you need to control your repeater or listen only to signals that are meant just for you.



TE-32 CTCSS Encoder

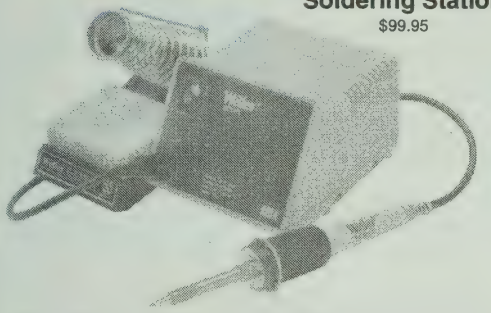
The TE-32 multi-tone CTCSS encoder is perfect for mobile operations or the test bench. It is powered by an 11 to 25 vdc unregulated source. It has a three position range switch and a frequency accuracy ±0.1 Hz maximum over the temperature operating range. The TE-32 is low impedance (1K), low distortion, with adjustable sine wave output, 5 V peak to peak. **HRO Price $49.95**

	Encode	Decode	Comments	HRO Price
TS-32P	*	*	Universal design, CTCSS encoder / decoder capability for all FM transceivers	$57.95
SS-64	*		DIP switch programmable CTCSS encoder for all FM transceivers	$28.95
TE-64	*		Multi-purpose CTCSS / Burst Tone encoder	$79.95

SOLDERING EQUIPMENT

Weller®

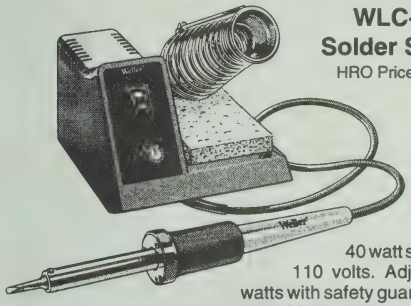
WTCPT
Soldering Station
$99.95



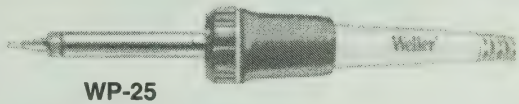
Weller offers a soldering station that is a must for every ham shack.

- Transformer powered with macro style, low voltage, temperature controlled soldering iron.
- Special "closed loop" method of controlling maximum tip temperature.
- Power unit housing features impact resistant plastic.
- Quick disconnect plug for iron and lighted on / off switch.
- Separate conductor grounds iron tip and terminates at third pin of power cord.
- Uses PT series tips and operates at 600°F, 700°F and 800°F.

WLC-100
Solder Station
HRO Price $44.95

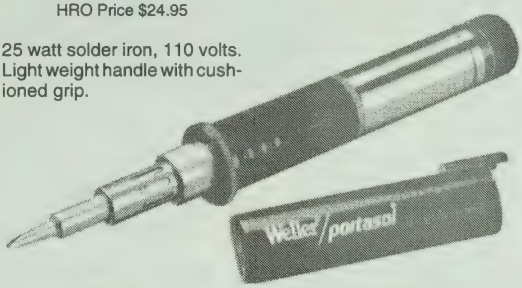


40 watt solder station, 110 volts. Adjustable 5-40 watts with safety guard solder iron. Includes holders, sponge and tip.



WP-25
Solder Iron
HRO Price $24.95

25 watt solder iron, 110 volts. Light weight handle with cushioned grip.

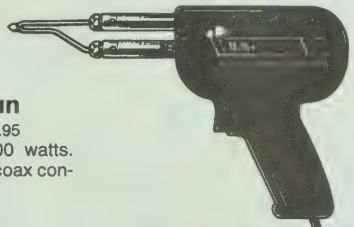


PSI-100
Self-Igniting Portable Iron
HRO Price $49.95

Self-igniting portable butane heat tool that allows antistatic soldering. Provides up to 125 watts of power.

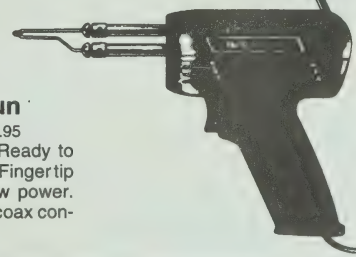
PSI-100K
Self-Igniting Portable Kit
HRO Price $79.95

A kit that contains the PSI-100, sponge, stand and extra tips in a plastic case.



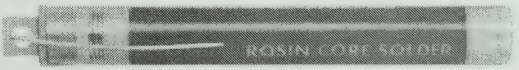
D650
Solder Gun
HRO Price $59.95

Solder gun, 200/300 watts. Great for soldering coax connectors outside.



8200
Solder Gun
HRO Price $29.95

100/140W, 110 V. Ready to solder in 6 seconds. Finger tip selection of high/low power. Great for soldering coax connectors.



RC60V
Lead-free Rosin Core Solder
HRO Price $3.99

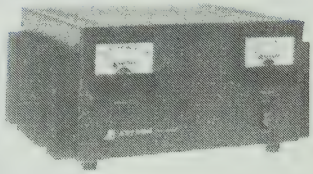
13 feet, 0.04 inches in diameter, active rosin core, lead free. In an easy to use dispenser tube.

FAX Your HRO Orders 24 Hours a Day

Anaheim	714-533-9485
Atlanta	770-263-9548
Burbank	818-988-4326
Denver	303-745-7394
New Castle	302-322-8808
Oakland	510-534-0729
Phoenix	602-395-1244
Portland	503-684-0469
Salem	603-898-1041
San Diego	619-560-1705
Sunnyvale	408-736-9499
Woodbridge	703-494-3679

POWER SUPPLIES

ASTRON CORPORATION



All of Astron's solid-state electronically regulated **Power Supplies** have fold-back current limiting to protect from excessive current and a heavy duty heat sink. Output voltage: 13.8 VDC ±.05 volts. 220 V supplies available on special order at slightly higher price.

RS-A Series Standard power supply with on / off switch. Voltage may be adjusted internally.

RM Series 19" x 5 1/4" rack-mount power supplies available with or without meters and may be variable. The new RM-60 comes with or without meters.

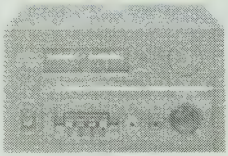
RS-M Series Power supply with front meters. One is for voltage and the other current.

VS-M Series Variable power supplies with separate volt and amp meters. Adjustable output voltage: 2-15 volts.

SL Series Slim Line design for low-profile looks.

SS Series High efficiency switching supplies specially filtered for use with communications equipment for all frequencies including HF. Heavy duty design, low profile, light weight and EMI filter.

YAESU



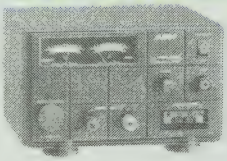
FP-1030A

Yaesu has power supplies primarily designed for use with their HF rigs. These include the **FP-712, FP-1025A** and the **FP-1030A** and are low profile switching supplies.

ICOM

The **PS-55** is a standard duty supply with cabinet styling to match IC-735 / 728 / 729. The heavy-duty **PS-30** station supply can operate several base station units. The **PS-35** is an internal suppply designed to be installed in the IC-751 or selected VHF / UHF base transceivers. The **PS-85** is specially designed for the IC-706 compact HF rig.

ALINCO



The **DM-340MVT** is a 35 amp supply with dual meters. Provides up to 30 amps. 110 VAC.

Power Supplies

Brand	Model	Cont.Duty 13.8 VDC	Intermit Duty	Height in	Width in	Depth in	Weight lbs	HRO Price
Alinco	DM-340MVT	30 A	35A	6	9.25	9	21	$159.95
Astron	RS-4A	3 A	4 A	3.75	6.5	9	5	$39.95
	RS-7A	5 A	7 A	3.75	6.5	9	9	$59.95
	RS-10A	7.5 A	10 A	4	7.5	10.75	11	$69.95
	RS-12A	9 A	12 A	4.5	8	9	13	$79.95
	RS-20A	16 A	20 A	5	9	10.5	18	$96.95
	RS-35A	25 A	35 A	5	11	11	27	$149.95
	RS-50A	37 A	50 A	6	13.75	11	46	$219.95
	RS-70A	57 A	70 A	6	13.75	13.75	48	$299.95
	RS-12M	9 A	12 A	4.5	8	9	13	$89.95
	RS-20M	16 A	20 A	5	9	10.5	18	$116.95
	RS-35M	25 A	35 A	5	11	11	27	$169.95
	RS-50M	37 A	50 A	6	13.75	11	46	$239.95
	RS-70M	57 A	70 A	6	13.75	12.12	48	$329.95
	RM-35A	25 A	35 A	5.25	19	12.5	38	$279.95
	RM-50A	37 A	50 A	5.25	19	12.5	50	$299.95
	RM-60A	50 A	55 A	7	19	12.5	63	$349.95
	RM-35M	25 A	35 A	5.25	19	12.5	38	$259.95
	RM-50M	37 A	50 A	5.25	19	12.5	50	$329.95
	RM-60M	50 A	55 A	7	19	12.5	63	$389.95
	VS-20M	16 A	20 A	5	9	10.5	20	$139.95
	VS-35M	25 A	35 A	5	11	11	29	$199.95
	VS-50M	37 A	50 A	6	13.75	11	46	$259.95
	SL-11A	7 A	11 A	2.75	7.62	9.95	11	$79.95
	SL-15R	12 A	15 A	2.75	7.62	9.95	14	$109.95
	SS-10	7 A	10 A	1.125	6	9	3.2	$83.95
	SS-12	10 A	12 A	1.375	6	9	3.4	$92.95
	SS-18	15 A	18 A	1.375	6	9	3.6	$99.95
	SS-25	20 A	25 A	2.875	7	9.375	4.2	$149.95
	SS-30	25 A	30 A	3.75	7	9.625	5	$169.95
Icom	PS-30	20 A	25 A	4.3	9.5	11.8	15.6	$499.95
	PS-35	17 A	20 A	*	*	*	6	$299.95
	PS-85	15 A	20 A					$269.95
Kenwood	PS-40	20 A	23 A	2.38	7.1	8.88	4.5	$199.95
	PS-52	22.5 A	22.5 A	4.25	7	12.25	16	$279.95
	PS-53	22.5 A	22.5 A	6.81	3.78	11.66	15.2	$229.95
Samlex	SEC1212	12 A	15 A	2.2	7	8.25	3	$79.95
	SEC1223	20 A	23 A					$99.95
Yaesu	FP-712	10 A	12 A	2.25	6	8.25	2.6	$129.95
	FP-1025A	20 A	25 A	2.25	6	8.25	4.2	$179.95
	FP-1030A	25 A	30 A					$239.95

* Internal Supply (220 volt versions of some models available at additional cost by special order. Contact HRO for details.)

Power Supplies

SAMLEX AMERICA

Switching Mode Base Station Power Supplies

SEC 1212

The SEC 1212 was designed specifically for use as a base station power supply for land mobile radios. It uses MosFet-based Switchmode technology for high reliability, high efficiency, and minimum size and weight. The design reduces output ripple to levels previously available only from bulky, less efficient linear power supplies. It delivers high power with no RFI. Current limiting and safe operating area circuitry protect the transistors and a crowbar circuit protects any devices powered by the SEC 1212 from excess voltage. The supply operates from 90-130 volts and produces 12 amps continuously, 15 amps at a 50% duty cycle for 5 minutes. Weight is only 3 pounds. The SEC 1212 has a three year warranty. **HRO Price $79.95**

SEC 1223

The SEC2020 provides 20A of DC power. **HRO Price $99.95**

KENWOOD

The **PS-53** is disigned for use with the TS-450S and TS-690S. The **PS-40** is a compact, switching supply for high current applications. It matches the TS-50. The **PS-52** is Kenwood's largest. It is designed for use with the TS-850 but it will run all Kenwood 12 VDC radios.

Power Station

PREMIER communications

GEL Cell Battery System
SB-712
$59.95
HRO Price

NEW!

Premier offers a GEL Cell battery system for operation independent of AC power system. It is perfect for operating low amperage equipment such as the new, low voltage handhelds. The SB-752 produces 12 VDC at a 7 amp hour rating. The power is switchable between 3, 5, 9 and 12 VDC. The unit includes a built-in DC volt meter. Charge the SB-712 with AC or DC current.

Advanced Battery Systems

Advanced Battery Systems (formerly Periphex) makes NiCD replacement battery packs for all popular handheld radios. The Super (S) models offer additional operating time when compared to manufacturer-provided batteries. Depending on the battery model and radio, an additional 15% to 100% operating time can be achieved. Advanced Battery Systems also makes environmentally friendly Nickel-Metal Hydride battery packs. Each battery is equipped with short circuit and over charge protection. The NiMH batteries do not develop the permanent "memory effect" often associated with NiCDs. NiMH chemistry has much higher capacity per volume and weight than NiCD chemistry. There are NiMH replacement packs for most popular handhelds. HRO stocks these packs to provide you with superior battery performance at an affordable price.

NiCD Batteries

Alinco Radios

Model	Volts (DC)	Capacity (mah)	HRO Price
EBP-22S	12	1100	$65.95
EBP-24S	7.2	1700	$62.95
EBP-34	8.4	1200	$35.00
EBP-34S	4.8	1700	$49.00
EBP-35	7.2	900	$50.00
EBP-36	9.6	650	$55.00

Icom Radios

Model	Volts (DC)	Capacity (mah)	HRO Price
BP-7S	13.2	1700	$65.95
BP-8S	9.6	1700	$65.95
BP-83S	7.2	1100	$43.95
BP-84S	7.2	1700	$63.95
BP-85S	12	1100	$76.95

Kenwood Radios

Model	Volts (DC)	Capacity (mah)	HRO Price
PB-7S	7.2	1700	$59.95
PB-8S	12	1100	$59.95
PB-13S	7.2	1200	$49.95
PB-14S	12	400	$60.95
PB-17	12	1100	$49.95
PB-18	7.2	1700	$49.25
PB-33	6	1200	$49.00
PB-34	9	600	$54.00

Yaesu Radios

Model	Volts (DC)	Capacity (mah)	HRO Price
FNB-12	12	600	$54.95
FNB14S	7.2	1700	$59.95
FNB-26S	7.2	1700	$65.95
FBN-27S	12	1100	$65.95
FNB-33	4.8	1700	$53.25
FNB-35	7.2	600	$49.95
FNB-38	9.6	650	$66.90
FNB-40	6	600	TBA
FNB-47	7.2	1200	TBA
FNB-49	7.2	600	TBA

NiMH Batteries

Alinco Radios

Model	Volts (DC)	Capacity (mah)	HRO Price
EBP-22SM	12	1300	$65.00
EBP-24SM	7.2	2200	$60.00
EBP-34M	4.8	2200	$65.00

Icom Radios

Model	Volts (DC)	Capacity (mah)	HRO Price
BP-7M	13.2	900	$69.00
BP-7SM	13.2	2200	$75.00
BP-8M	8.4	2200	$69.00
BP-83M	7.2	1300	$50.00
BP-84SM	7.2	2200	$60.00
BP-85SM	12	1300	$75.00

Kenwood Radios

Model	Volts (DC)	Capacity (mah)	HRO Price
PB-7SM	7.2	2200	$65.00
PB-8SM	12	1300	$62.00
PB-13SM	7.2	1300	$50.00
PB-14SM	12	600	$50.00
PB-17M	12	1300	$69.00
PB-18M	7.1	2200	$55.00
PB-33M	6	1900	$49.00
PB-34M	9.6	900	$57.00

Standard Radios

Model	Volts (DC)	Capacity (mah)	HRO Price
CNB-152M	12	900	$69.00
CNB-153M	7.2	1300	$49.00

Yaesu Radios

Model	Volts (DC)	Capacity (mah)	HRO Price
FNB-11M	12	1300	$59.00
FNB-25M	7.2	900	$50.00
FNB-26SM	7.2	2200	$64.00
FNB-27M	12	900	$59.00
FNB-27SM	12	1300	$59.00
FNB-33M	4.8	2200	$49.00
FNB-35M	7.2	900	$65.00
FNB-38M	9.6	750	$75.00
FNB-41M	9.6	900	$55.00
FNB-47M	7.2	1800	$75.00

MAHA

Nickel Metal Hyride Replacement Battery Packs

MH-FNB-12

Maha has nickel metal hydrides for ham radio battery packs. Advantages:

- No memory effect.
- Long life and 50%-100% increase in capacity over same size NiCADs.
- Light weight; small size.
- Environmentally friendly.

NEXcell Rechargeable NiMH Battery Cell - AA size, perfect for scanners, mini-amateur radios and battery cases. 1.2 V 1200 mAh. **HRO Price $2.99**

Icom

Model	Volts (DCV)	Capacity (mah)	HRO Price
MH-BP-7	13.2	900	$69.95
MH-BP8	8.4	1200	$59.95
MH-BP-8H*	8.4	1800	$69.95
MH-BP-83	7.2	1200	$49.95
MH-BP-132B	12	1200	$59.95
MH-BP-132G	12	1200	$59.95
MH-BP-180	7.2	1000	$49.95

*Same size as MH-BP-8 and Icom BP-8

Kenwood

Model	Volts (DCV)	Capacity (mah)	HRO Price
MH-PB-8	12	1200	$62.95
MH-PB-17	12	900	$69.95
MH-PB-18	7.2	1200	$49.95
MH-PB-32	6	900	$47.95
MH-PB-33	6	1200	$49.95
MH-PB-34	9.6	900	$57.95

Standard

Model	Volts (DCV)	Capacity (mah)	HRO Price
MH-CNB-152	12	900	$59.95
MH-CNB-153*	7.2	1200	$49.95

*Same size as CNB-151

Yaesu

Model	Volts (DCV)	Capacity (mah)	HRO Price
MH-FNB-12	12	900	$59.95
MH-FNB-17	7.2	900	$49.95
MH-FNB-27	12	900	$59.95
MH-FNB-31	4.8	650	$49.95
MH-FNB-38	9.6	650	$59.25
MH-FNB-40H	7.2	650	$56.95
MH-FNB-41	9.6	900	$55.95
MH-FNB-V47	7.2	1800	$69.95

Universal Rapid Battery Charger for NiCD & NiMH

MH-C777

Charge and condition nearly any type of amateur radio battery pack in just one hour. No extra plates or adapters needed. The latest -dV and dT sensors prevent undercharge or overcharge to prolong battery pack life. Supports 4.8, 6, 7.2, 9.6, and 12 volts. In-house transformer and car adapter kit included.
HRO Price $49.95

New Universal Drop-In Rapid Charger

NEW!

To Be Announced

Please contact your local HRO for the latest information on new MAHA products.

Desktop Rapid Chargers

Model	Compatible Battery Packs	HRO Price
MH-101-Y1	Yaesu FNB 10 - 17, 25 - 27	$69.95
MH-101-Y2	Yaesu FNB 31 - 38	$69.95
MH-101-Y3	Yaesu FNB 40 - 42	$69.95
MH-101-I1	Icom BP 131, 132, 157, 160, 174	$69.95

Accessories

Model	Description	HRO Price
MHS-V47BC	Sping loaded belt clip for HM-FNB-41 & V47	$9.95
MHS-CPB3	PL-259 to BNC 50 Ohm patch cable to connect HT to amp. 1 meter long	$8.90
MHS-Y3	MH-A301 & 302 adapter for Yaesu FT-51R	$9.95
MHS-Y4	MH-A301 & 302 adapter for Yaesu FT-50R	$9.95
MHS-I4	MH-A301 & 302 adapter for Icom T7/T22/T42/ Z1A/W31/W32	$9.95

QUANTUM INSTRUMENTS

All-day Battery Power For Your Handheld!

The Quantum Ham Battery (model QHB) can power most handi-talkies 3 to 5 times longer than nicad packs. The battery delivers 12 volts for a 5 W output from most HT's.

The power pack contains a rechargeable battery and electronics. Adapters with coiled cords connect it to an HT or other equipment. Use one Ham Battery for different equipment by just switching adapters. Changing to a new HT? Just purchase a new adapter, not a whole new battery and charger.

Ham Battery's compact leatherlike case can be belt-attached or hooked to a shoulder strap. Inside is a powerful 2.1 amp hour, high rate 12 volt rechargeable battery. The sealed lead-type cells can be recharged to 100% capacity at all times. A three-LED "fuel gauge" lets you know how much charge remains.

Ham Battery has a built-in automatic circuit breaker, recharge indicator, and regulator. A charger is supplied with the battery. Two output sockets power two pieces of equipment at once. **HRO Discount Price 129.95**

Quantum Adapters / Accessories

Model	Description	HRO Price
HB3	Icom "S" series, IC-24AT, W2A, 2SRA, 4SRA, R1	$27.95
HB4	Icom "A" & "G" series except IC-24AT	$27.95
HB5	Kenwood TH-205AT, 215A, 225A, 315A, 415A	$27.95
HB6	Kenwood TH-25, 26AT, 45AT, 46AT, 75A, 77A	$27.95
HB7	Yaesu FT-103R, 109R, 203R, 209R/RH, 703R, 709R, 727R	$27.95
HB9	Yaesu FT-23R, 33R, 411, 470, 73R, 811, 911	$27.95
HB10	Vehicle socket adapter	$20.95
HB11	Alinco DJ-160, 460, 560T/E	$38.95
HB13	Icom P series IC-P2 / 3 / 4AT	$38.95
HB16	Kenwood TH-27 / 28 / 47 / 48A / 78A, Yaesu FT-416 / 816	$38.95
HB19	Yaesu FT-26 / 76 / 415 / 815 / 530	$38.95
HB20	DC plug set	$28.95
HB21	Alinco DJ-F1T / F1T-HP	$38.95
HB31	Alinco DJ-580T, 180T	$38.95
HB36	Vehicle fast charger	$69.95
RA17	AC adapter for HB36	$39.95
HB0	Coiled power cord for QHB	$18.95
HB40	Quantum shoulder strap	$14.95
HBCA-4	Standard C228 / 528 / 628A	$35.95
HBCA-5	Standard C168 / 468A	$36.95

Connectors

Connect Works

Model	Description	HRO Price
B-112XC	BNC for RG-8/X Gold Pin	$3.99
BU-312	BNC to UHF Adapter (BNC-255)	$5.99
NU-312	N to UHF Adapter (4400)	$9.99
SB-312	SMA to BNC Adapter	$9.99
U-245C	4 hole SO-239 Chassis Connector	$1.99
U-311	Double Male UHF (83-877)	$6.99
U-322	UHF Barrel (83-1J)	$4.99
U-332	Long UHF-UHF Barrel (83-1F)	$6.99
U-412	RT. Angle Teflon, Gold Pin (83-1AP)	$8.99
U-512C	UHF "T" (83-1T)	$6.99
UB-312	BNC to UHF Adapter (31-28)	$6.99
UN-312	UHF to N Adpter (14000)	$15.99

Packet Cables

RB Enterprises

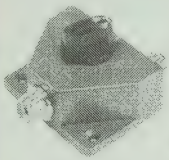
Connect your packet rig and radio with a pre-made cable.

Model	Description	Radio DIN (Pins)	HRO Price
MRJ-I	MFJ/AEA to Icom 281/2000	5	$19.95
MRJ-K	MFJ/AEA to Kenwood modular	5	$19.95
MRJ-Y	MFJ/AEA to Yaesu modular	5	$19.95
KD-12	Kantronics mini-DIN 1200	6	$19.95
KD-96	Kantronics mini-DIN 9600	6	$19.95

Coax Switches

DAIWA

Daiwa has two heavy-duty coaxial switches. Both are useable to 500 MHz and the unused positions are grounded. Switches are available at slightly higher prices with type "N" connectors.

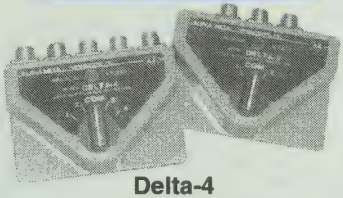


CS-401
Four-position switch.
HRO Price $109.95

CS-201
Two-position switch.
HRO Price $25.95

Lightning Protection

ALPHA DELTA



Delta-4
4 Position Switch

This lightning protected 4 position RF coax switch uses the Alpha Delta Arc-Plug cartridge to protect your equipment from electrical surges. It features the exclusive center "off" (ground) position which internally disconnects and grounds all antenna circuits. The Delta-4 has custom designed cast housing with constant impedance micro-strip cavity construction for outstanding performance through UHF. The switch uses a positive detent roller bearing switch drive, and handles full legal power. Made in the USA. Order Delta-4/N for type "N" connectors. The Delta-4 handles frequencies through 500 MHz and the Delta-4/N through 1.3 GHz. **HRO Price $79.95; Type N $89.95**

Delta-2
2 Position Switch

This 2 position coax switch is precision lightning surge protected. It has the same constant impedance cavity construction with "center-off" ground as the Delta-4 and a built-in replaceable Arc-plug®cartridge. Order UHF or type "N" connectors for low-loss performance through 1.3 GHz.
HRO Price $49.95; Type N $64.95.

Surge Protectors

ALPHA DELTA

Transi-Traps

Protect your rig from lightning, EMP and static. Transi-Traps are constructed of the finest quality materials: housings are of die cast aluminum; the brass element provides a constant impedance; the ceramic gas tube cartridge is protected by a unique custom-designed nylon shock absorber. The units give years of reliable service. When hit with a charge that exceeds its rating, it will short and indicate that a replacement plug is required. Most units take thousands of surges before needing a replacement.

Transi-Traps are designed for 50 ohms and include a replaceable cartridge. Units come with UHF connectors. Type "N" are available. To order replacement plugs, specify the model of Transi-Trap so the correct plug can be sent.

Model	Description	HRO Price
RT	200 W through 500 MHz	$36.95
HV	2 kW through 500 MHz	$39.95
LT	T type, 200 W through 30 MHz	$29.95

Batteries

Duracell

Many of the accessories and radios offered in the catalog require batteries for their operation. HRO carries the popular Duracell batteries. Include these in your next order.

Model	Description	HRO Price
AA	AA Alkaline Battery	$0.79
9 Volt	9 Volt Alkaline Battery	$2.49
C	C Size Alkaline Battery	$1.29
D	D Size Alkaline Battery	$1.29

Timewave Technology Inc.

Digital Signal Processor Noise Filters

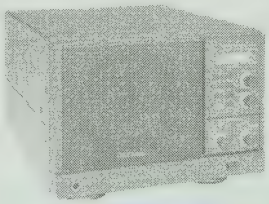
DSP-599zx

All Mode Noise Filter & RTTY Modem

This powerful noise and QRM filter surpasses the newest "DSP" radios with its many flexible features. Continuous filter tuning up to 5 kHz opens up wider bandwidth modes like shortwave, AM broadcast, and VHF/UHF FM. Heterodynes disappear, weak signals pop up from the noise, and the razor sharp filters slice away QRM. The DSP RTTY modem (w/optional DSP-RTTY software) pulls out solid copy when you can barely hear a signal. An AM line noise filter dramatically reduces line noise that the newest radios can't touch! Filter settings are easy-to-read on the backlit alphanumeric LCD display. Pushbuttons select noise reduction, memories, voice, CW, and data modes. Optical encoders tune the filters.

- Hyperspeed DSP - 27 ns, 36.8 MIPS.
- 2 selectable channels with multiple memories.
- Front panel programmable input sensitivity and line output level.
- Calibrated audio voltmeter and generator.
- AC line noise filter for AM.
- 13 preset data filters + 2 user presets.

(See the DSP-59Y ad for more DSP-599zx info.)
Reviewed in: *QST - December 1996, 73 - May 1997, World Radio TV Handbook - 1997, Practical Wireless - January 1998*
HRO Price $369.95 AC-4 P.S. $19.95



Pictured with optional speaker

DSP-59Y

DSP Plug-In for Yaesu

The DSP-59Y is a matching plug-in module that fits into the Yaesu SP-5 / SP-6 speakers. The DSP-59Y shares most of the DSP-599zx features. They have LCD displays for Visible Memories™, CW filters from 10 Hz to 600 Hz wide with CW pitch shift, and voice filters up to 5 kHz wide for SSB, FM, and AM shortwave listening. They have automatic notch filters for voice and manual notch filters for CW. Both the DSP-59Y and the DSP-599zx have variable noise reduction aggressiveness. Both DSPs are field upgradable. The DSP-59Y uses the existing 1/4" phone jack and the A/B input switch in the speaker cabinet. (See the DSP-599zx ad for more DSP-59Y info.)
HRO Price: $349.95 AC-4 P.S. $19.95

DSP-RTTY

NEW!

for DSP-599zx/59Y

Operate RTTY with your DSP-599zx or DSP-59Y, transceiver, and computer – no other data controller required! This WIN95 program has all the RTTY features you want: CQ, brag, exchange and startup tapes, 45 - 110 baud Baudot/ASCII, macros/function keys, xmit status, and big buffers. DSP-RTTY even has a terminal window for checking the DX packet cluster with your TNC. A TNC startup file lets you program your TNC to optimum parameters for your local packet cluster. Requires WIN95, 8Mb.
HRO Price: $TBA

DSP-59+

Digital Signal Processor

The DSP-59+ improves radio reception by reducing noise and interference. Digital signal processing provides filters for five basic functions: 1) Random noise reduction; 2) Tone noise reduction; 3) Adjustable highpass filtering; 4) Adjustable lowpass filtering; 5) Adjustable bandpass filtering. The functions combine to make 550 filter possibilities for voice, data and CW. The DSP-59+ is compatible with all amateur radio transceivers and receivers. Simply connect it between the radio and the speaker. Requires 12-16 VDC to operate (not provided). **HRO Price $249.95 AC-4 P.S. $19.95**

DSP-9+

Noise Filter

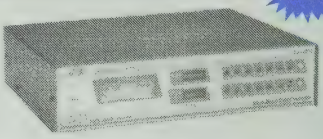
The DSP-9+ digital signal processor reduces random noise, eliminates heterodynes, and filters QRM. Pushbuttons select all the filters for quick, simple operation. Random noise reduction and heterodyne elimination is automatic – just press the button! Sharp filters effectively slice away QRM from voice, data and CW. Voice filters offer bandwidths from 1.6 to 2.7 kHz. CW filter bandwidths range from 100 Hz to 500 Hz. Data filters match RTTY, AMTOR, PacTOR, and HF Packet. ***Great for mobile operation 160-6 meters.*** **HRO Price $199.95**

Data Controllers / TNCs

DSP-2232zx

Multi-mode Data Controller

NEW!



The legacy of the proven DSP-2232 in a rugged package to match the renowned DSP-599zx! Dual port with RTTY, AMTOR, PacTOR, 9600/1200 bps Packet, satellites, SITOR, NAVTEX, and more. Now with 16 bit A/D-D/A conversion and a faster DSP! Includes PC PakRatt for Windows. **HRO Price: TBA**

PK-96

9600 / 1200 bps TNC

Speed up to 9600 bps with powerful features for the DX Cluster, APRS/GPS, TheNet, Net/ROM, TCP/IP, DAMA. Includes Mailbox, Hardware HDLC, DCD, and PC PakRatt Lite software. The lowest cost 9600 bps TNC! **HRO Price $189.95 AC-1 P.S. $19.95**

PK-12

1200 bps TNC

The PK-12 is an easy-to-use 1200 bps, VHF/UHF Packet TNC with great features. Compatible with virtually every 144/222/440 MHz transceiver. Ideal for GPS, APRS, weather stations, DX clusters, and keyboarding. 9v battery power for mobile operation. 68HC11 processor. W/PC PakRatt Lite software. **HRO Price $95.95**

Software

Log Windows

Logging, Awards, Station Control, DX Packet Cluster

A proven program for your station with rig and rotator control, CD-ROM callbook interface, QSL manager lists and voice/cw DX spots. Interim updates available on WWW. For WIN95, 3.1. **HRO Price $49.95**

PC PakRatt for Windows

The **official terminal program** for all Timewave and AEA TNCs and data controllers. PacTOR, AMTOR, RTTY, Morse, NAVTEX, SIAM (signal identification). WIN95, 3.1. **HRO Price $79.00**

FAX III

WeFAX, NAVTEX, RTTY, CW

Receive HF weather fax images with a receiver, your computer, and FAX III. Features color, tuning indicator, image storage, printing. Includes demodulator. Requires serial port and DOS. **HRO Price $99.95**

Morse University

Get your license or upgrade now!

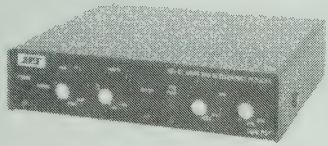
Learn Morse code and theory to pass all your FCC exams. Teaches you the code from Novice to Extra! Proven by thousands! WIN95, 3.1. **HRO Price $39.95**

Audio Enhancers

ANC-4
Power Line Noise Filter

Eliminates power line noise before it enters the receiver. You will hear signals you did not know were there. Reduces locally-generated noise typically by 50 dB.

Usable between 100 kHz and 80 MHz. Short whip and wire antennas supplied. Rear panel connector for external noise probe. Auto transmit switchover up to 250W. Delay time internally selectable. Install between the antenna and receiver. Europe CE Certified. Requires 12VDC @ 300 mA. **HRO Price $179.95**



NIR-12
Dual DSP
Noise Reduction & Filter

TWO 40 MHz DSPs provide the most powerful and advanced DSP noise reduction unit available. Unparalleled performance, super selective FIR filters, fully adjustable filter center frequency and bandwidth (3400 Hz to 50 Hz); both Dynamic Peaking and Spectral Subtraction Noise Reduction; Spectral multi-tone NOTCH filter.

All NIR-12 modes and functions may be used simultaneously. Use on all operating modes, including AMTOR and PACTOR. Install between the receiver audio output and the external speaker. Europe CE Certified. Requires 12VDC @ 1A. **HRO Price $339.95**

High / Low Pass Filters

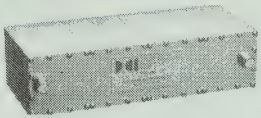
BENCHER, INC.

YA-1

Bencher's low-pass filter has exceptional specifications. Working range: 1.8-29 MHz. Impedance: 50 ohms. Power rating: 1.5 KW continuous, 5 KW peak. Attenuation: at least 80 dB at 54 MHz. **HRO Price $69.95**

Bandpass Filters

DIGITAL COMMUNICATIONS INC.



DCI-146-4H
Bandpass Filters

Eliminate intermod with these bandpass filters **for 144, 220 and 440 MHz.** Connect a filter between your VHF / UHF, base or mobile rig and antenna. Enjoy monitoring your favorite station without listening to the squawks and squeals of intermod. These filters reduce the strength of interfering signals while allowing the signals you want to hear to pass through at virtually full strength.

The filters are made to first-class specifications with silver-teflon connectors and extruded aluminum, copper and brass. In addition to the standard 4-pole filters, 7-pole and larger ultra-sharp filters are available. Contact HRO for more information.

The DCI-146-4H intermod filter for 2 meters is 12"X3"X5" and has UHF connectors. It can be custom tuned to almost any frequency between 100 and 900 MHz. **DCI-146-4H: HRO Price $89.95**

Telephone Filters

K-COM

Stop telephone RFI from transmitters in the 0.5 to 30 MHz range. These filters are assembled and come with instructions. Special order either model to cover 500 kHz to 3.0 MHz. Call for prices and information.

Model RF-1 Single Line Filter for phones, answering machine, modems, fax and cordless phones. RJ-11 modular connectors. Can be special ordered for two-line phones. **HRO Price $16.95**

Model RF-2 For inserting RFI filtering into telephone wiring: inside phone jacks, behind wall-mounted phones, etc. Solder-less connectors. **HRO Price $10.95**

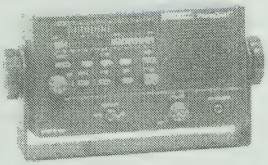
Digital Signal Processor

SGC

PowerClear™

$395.95
Suggested List

$309.95
HRO Discount



Use the PowerClear™ control unit for enhanced signal clarity with any HF SSB rig. PowerClear™ is packed with advanced ADSP and SNS technology to greatly increase signal clarity and drastically reduce noise, providing unsurpassed audio signal quality. The listener will hear a remarkable improvement in SSB audio and increased intelligibility of signals.

PowerClear™ cuts out unwanted reception and interference from adjacent stations. SNS digital circuitry analyzes the desired audio and undesired noise and automatically reduces the background roar. On digital signals, it automatically strips away interference. The unit has audio and visual fine tuning for swift interception of weak signals and 8 preset and 7 user programmable ADSP memories. PowerClear™ also serves as a preamplifier.

AMPLIFIERS

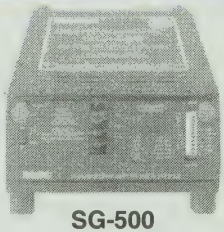
HF Amplifiers

JRL-2000F

$3999.95

HRO Price

The JRL-2000F has solved the problems of many conventional linear amplifiers: troublesome manual operation, fan noise, low margin of output and high IMD. The JRL-2000F is a heavy duty amp using 48 MOSFET for low distortion, high speed automatic antenna tuner, high efficient switching power supply, automatic antenna selector, and wireless remote control unit. Provides 1 kW output with a maximum input of 100 watts. Shipped by truck or FedEx only at extra cost.



SG-500

$1099.95

HRO Price

The SmartPowerCube produces tremendous power–nearly as much as a 1 KW amplifier–yet it requires less than one cubic foot of space. Electronic brain power makes it possible. The SG-500 is an intelligent, microprocessor controlled, high-powered linear amplifier, designed with high efficiency transistors. It constantly monitors your HF-SSB's activities, power needs, and antenna condition, and automatically–in less than 15 milliseconds–selects the right broadband filter. It can reliably produce, essentially unattended, in the most demanding conditions. Power supply required. SGC PS50 recommended to guarantee specifications. **Now available in export or domestic version.**

Quadra System

NEW!

$4999.95

HRO Price

Here's all the linear amplifier you should need for operation on both HF (160 to 15 meters) and 6 meters. It provides automatic band switching with the FT-1000D, FT-1000MP, FT-920, FT-990, and the FT-900 HF radios.

The amp has 8 MRF150 power MOSFet transistors designed into 4 units of 2 transistors in a push-pull circuit at 48 VDC. The separate power supply, the VP-1000 allows for easy installation. There are two input voltages, 117 VAC or 220 VAC. Output power is a function of the power supply voltages. At 220 VAC there is 1000 watts out on HF and 500 watts on 6 meters. At 117 VAC the output is reduced to 500 watts on HF.

The amplifier comes equipped with a built-in high speed antenna tuner to match the amp to your antennas. It has four antenna outputs and two inputs. The multifunction omni-glow LCD display shows the status of the amplifier. There is automatic system monitoring with VSWR protection.

Patch Cables

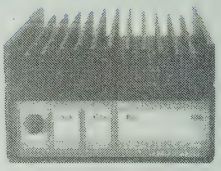
VAN GORDEN

Use Van Gorden Patch Cables to connect your amp to your rig. They are made from RG-8X coax with silver teflon PL-259 connectors. Use the longer cables for antenna runs.

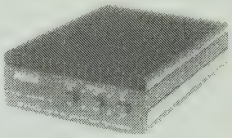
Model	Length (feet)	HRO Price
8X-1.5ST	1.5	$6.99
8X-3ST	3	$8.99
8x-6ST	6	$11.99
8X-12ST	12	$14.95
8X-18ST	18	$18.95
8X-25ST	25	$24.95
8X-50ST	50	$29.95
8X-100ST	100	$49.95

VHF / UHF Amps

rfconcepts



Kantronics has redesigned it's FM VHF/UHF amplifier line for 1997. The MAX-amp series are computer designed and feature directional couple keying, VSWR protection, and temperature protection. The MINI amps are perfect for use with HTs. Here's that "extra punch" needed for distant contacts.



MAHA

MH-A104

Maha's line of compact amplifiers for 2m/70cm single and dual-band use will help you hit repeaters more easily and receive better with their low noise GaAsFET pre-amps. While using Maha's docking boosters for your handhelds, there is no need for the battery pack. The booster will power your radio while it boosts the transmission and receive. The MH-A104 amplifier supports both SSB and FM modes. The output power is adjustable 10 to 100W with a +5 to + 15 dB adjustable receiver pre-amplifier. More amps and docking boosters are listed on page 72.

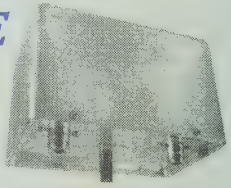
VHF / UHF Preamps

LANDWEHR

GaAsFET Preamps

Landwehr's affordable, high quality, mast-mounted preamps come in three models: 2 meters, 220 MHz and 440 MHz. The GaAs-FET design provides gains up to 18 dB with a low noise figure. Features include type-N connectors and automatic T/R switching up to 150 watts. The preamp is **very popular** with satellite and "weak signal" enthusiasts. Call for quotes.

AMPIRE



Ampire's low noise pre-amplifiers for VHF and UHF automatically switch from receive to transmit whenever the transmitter is keyed. In receive mode they feature a helical filter with a narrow bandpass. In case of power loss, the relay will drop out of the transmit mode.

HRO will provide 10 meter modification information to amplifier customers upon receipt of a copy of your valid, current amateur radio license.

AMPLIFIERS

Manufacturer	Model	Frequency Range	Modes	Power In	Power Out	Voltage	Current	Pre-amp	Connector	Wgt	HRO Discount Price
Ameritron	AL-1500	160-15 M*	SSB. CW	65 W	1500+ W	220 VAC	15 A	–	SO-239	50 lbs#	$2,399.95
	AL-1200	160-15 M*	SSB. CW	100 W	1500 W	220 VAC	15 A	–	SO-239	50 lbs#	$199.95
	ALS-500M	160-15 M*	SSB. CW	100 W	500 W	13.8 VDC	80 A	–	SO-239	7 lbs	$689.95
	AL-572	160-15 M*	SSB. CW	100 W	1300 W	110/220 VAC	12 A 110V		SO-239		$1,299.95
	ALS-600	160-15 M*	SSB. CW	100 W	600 W	110/220 VAC	16 A 110V	–	SO-239	13 lbs#	$1,099.95
	AL-80B	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC	15/10 A	–	SO-239	54 lbs	$1,099.95
	AL-800	160-15 M*	SSB, CW	100 W	750 W	110 VAC	12 A	–	SO-239	67 lbs	$1,429.95
	AL-800H	160-15 M*	SSB, CW	55 W	1500 W	240 VAC	9 A	–	SO-239	69 lbs	$2,059.95
	AL-811	160-15 M*	SSB, CW	75 W	600 W	110/220 VAC	8/4 A	–	SO-239	40 lbs	$629.95
	AL-811H	160-15 M*	SSB, CW	75 W	800W	110/220 VAC	8/4 A	–	SO-239	41 lbs	$749.95
	AL-82	160-15 M*	SSB, CW	100 W	1500 W	220 VAC	15 A	–	SO-239	52 lbs#	$1,869.95
ICOM	IC-PW1	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC		–	SO-240	55 lbs	TBA
JRC	JRL-2000F	160-12 M*	SSB,CW	100 W	1000 W	110/220 VAC	2.5 kVA	–	SO-239	62 lbs	$3,999.95
MAHA	MH-A101	144-148	SSB/FM	5 W	35 W	13.8 VDC		–	SO-239		$69.95
	MH-A102	144-148	SSB/FM	5 W	35 W	13.8 VDC		yes	SO-239		$89.95
	MH-A103	144-148	SSB/FM	5 W	50 W	13.8 VDC		yes	SO-239		$109.95
	MH-A104	144-148	SSB/FM	5 W	10-100 W	13.8 VDC		yes	SO-239		$209.95
	MH-A201	144-148/430-450 MHz	SSB/FM	5 W	45 / 35 W	13.8 VDC		–	SO-239		$149.95
	MH-A301 Booster	144-148	SSB/FM	5 W	50 W	13.8 VDC		yes	SO-239		$109.95
	MH-A302 Booster	144-148/430-450 MHz	SSB/FM	5 W	45 / 35 W	13.8 VDC		yes	SO-239		$149.95
Mirage	A -1015G	50-54 MHz	All	10 W	150 W	13.8 VDC	23 A	yes	SO-239	5 lbs	$359.95
	B-34	144-148 MHz	FM	2 W	35 W	12-15 VDC	4 A		SO-239	2 lbs	$69.95
	B-34G	144-148 MHz	FM	2W	35 W	12-15 VDC	4 A	yes	SO-239	2 lbs	$89.95
	BD-35	143-149/430-450 MHz	FM	7 W	45 W	12-15 VDC	7 A		SO-239	3 lbs	$149.95
	B-215G	144-148 MHz	All	2 W	150 W	13.8 VDC	20 A	25 dB	SO-239	5 lbs	$309.95
	B-310G	144-148 MHz	All	4 W	100 W	13.8 VDC	15 A	yes	SO-239		$189.95
	B-1016G	144-148 MHz	All	10 W	160 W	13.8 VDC	25 A	10 dB	SO-239	5 lbs	$349.95
	B-1030G	144-148 MHz	All	10 W	300 W	13.8 VDC	48 A	yes	SO-239		$649.95
	B-2516G	144-148 MHz	All	25 W	160 W	13.8 VDC	25 A	10 dB	SO-239	5 lbs	$289.95
	B-2530G	144-148 MHz	All	25 W	300 W	13.8 VDC	48 A	yes	SO-239	15 lbs	$649.95
	B-5016G	144-148 MHz	All	50 W	160 W	13.8 VDC	24 A	yes	SO-239		$289.95
	B-5030G	144-148 MHz	All	50 W	300 W	13.8 VDC	48 A	yes	SO-239		$629.95
	C-22G	222-225 MHz	All	2 W	20 W	13.8 VDC	5 A	yes	SO-239	2 lbs	$159.95
	C-211G	222-225 MHz	All	2 W	110 W	13.8 VDC	20 A	yes	SO-239	5 lbs	$299.95
	C-106G	222-225 MHz	All	10 W	60 W	13.8 VDC	12 A	yes	SO-239	4 lbs	$219.95
	C-1012G	222-225 MHz	All	10 W	120 W	13.8 VDC	5 A	yes	SO-239	5 lbs	$329.95
	C-2512G	222-225 MHz	All	25 W	120 W	13.8 VDC	20 A	yes	SO-239	5 lbs	$299.95
	C-2522G	222-225 MHz	All	30 W	200 W	13.8 VDC	42 A	yes	SO-239		$639.95
	D-15N	425 - 450 MHz	All	2 W	15 W	13.8 VDC	3 A	–	N type		$169.95
	D-26N	430-450 MHz	All	2 W	60 W	13.8 VDC	12 A	–	N type	2 lbs	$259.95
	D-1010N	430-450 MHz	All	10 W	100 W	13.8 VDC	20 A	–	N type	5 lbs	$369.95
	D-3010N	430-450 MHz	All	30 W	100 W	13.8 VDC	20 A	–	N type		$329.95
	D-100-ATVN	429 MHz ATV	All	1 W	52 W	13.8 VDC	20 A	–	N type		$379.95
	D-1010-ATVN	430 MHz ATV	All	10 W	100 W	13.8 VDC	20 A	–	N type		$379.95
RF Concepts	MAXAMP-10	144-148 MHz	All	10 W	150+ W	13.8 VDC		yes			$329.95
	MAXAMP-45	144-148 MHz	All	45 W	150+ W	13.8 VDC		yes			$299.95
	MINAMP-144P	144-148 MHz	FM	3 W	30 W	13.8 VDC		yes			$114.95
	MINAMP-440P	430-450 MHz	FM	2 W	20 W	13.8 VDC		yes			$149.95
	4-310	420-450 MHz	All	.2-40 W	(30in)100 W	13.8 VDC	20 A	12 dB	N type	5 lbs	$349.95
	4-110	420-450 MHz	All	.2-15 W	(10 in) 100 W	13.8 VDC	22 A	12 dB	N type	5 lbs	$359.95
	VHF-1-60	144-148 MHz	FM	1-8 W	(i in) 60 W	13.8 VDC	14 A		SO-239	7 lbs	$119.95
SGC	SG-500	Export or Domestic	SSB,CW		500 W	13.8 VDC	**				$1,099.95
Yaesu	Quadra System	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC	†	–	SO-239	33 lbs	$4,999.95

* Owner modifiable for 10 meters # Add 35 pounds for transformer shipped in separate package. ** SGC PS-50 recommended † VP-1000 power supply recommended

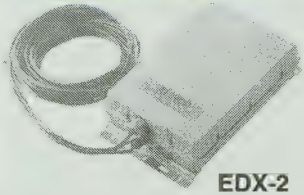
ANTENNA TUNERS

Nye Viking

3 KW Tuner
MB-V-A

This high quality antenna tuner is designed for the amateur who wants "the best." Match transmitter output impedance to almost any antenna system for maximum power transfer. Low pass Pi network tuning 1.8-30 MHz. Automatic SWR. Separate power meter, 300 or 3000 W. Push button antenna switch for 4 antennas. Includes 3 KW balun. **HRO Price $799.95**

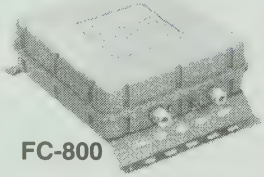
ALINCO



EDX-2

This automatic tuner is designed for use with the Alinco DX-70 HF radio but may be adapted for use with most HF rigs. Tunes from 10 to 160 m with wire lengths of 8 to 80 feet (40' for 160m). **HRO Price $299.95**

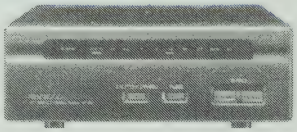
YAESU



FC-800

This automatic antenna tuner operates with the FT-890 HF transceiver. The tuner is fully automatic and operations can be controlled from the front of the FT-890. **HRO Price $469.95**

KENWOOD



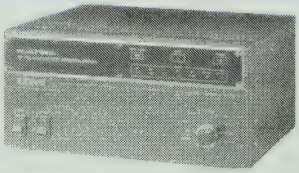
AT-50

A fully automatic antenna tuner to use with the TS-50 and other 100 watt HF transceivers. Useful for both mobile or fixed operation. Accurate tuning by pressing the AT TUNE key on the TS-50. Can be installed remotely. **HRO Price $339.95**

ICOM

Icom has two antenna tuners to use with their radios. All are automatic and, with the front panel controls, can be used with most HF exciters. Random wire and balanced line antennas cannot be used with the resonant antenna tuners. See the table on Page 9 for more tuner / radio compatibilities.

Resonant



AT-180

Fully automatic 100 W tuner styled for the IC-706. HF/6 meters. **HRO Price: $499.95**

Random Wire

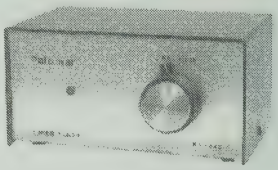
NEW!

AH4

This automatic tuner covers 3.5 MHz through 50 MHz with a 7 meter or longer antenna or the optional AH-2b antenna element (7 MHz to 50 MHz). It is designed for use with all Icom transceivers. Forty-five memories store channel information for quick tuning. Installation is simple. No adjustments are necessary. Just connect the control and antenna cables. Its small size allows installation in a variety of locations. **HRO Price $309.95**

Tuner-Tuner™

Palomar Engineers



Tuner-Tuner™
PT-340

If you use an antenna tuner, then you need the Palomar Tuner-Tuner to tune it to your operating frequency without turning on your transmitter, Connect the Tuner-Tuner between your tuner and your rig. Tune your receiver to the frequency on which you want to operate, Turn on the Tuner-Tuner and you will hear a loud, S9+ noise. Adjust your tuner until the noise drops out completely. Turn off the Tuner-Tuner and you are ready to transmit. **HRO Price $99.95**

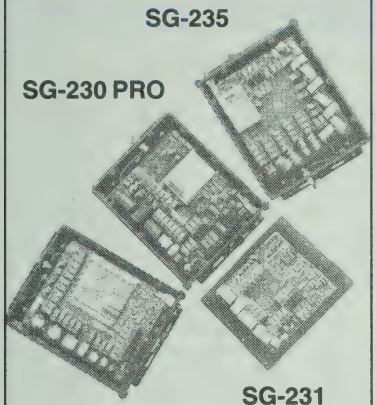
Frequency Counters

Startek International

Startek's ATH™ series brings you auto trigger and hold in a pocket sized frequency counter. Super fast circuitry reads and holds a signal in less than one-tenth of a second.

Model	Description	HRO Price
ATH10	1-1200 MH with auto trigger	$149.95
ATH15	1-1500 MHz high speed	$179.95
ATH30	1-2800 MHz high speed with ATH	$229.95
ATH50	ATH-30 plus Hi-Z input 5 Hz to 48 MHz	$279.95

Smart Tuners



The SGC series of Smartuners are designed to be installed at the antenna feed point, thereby eliminating system loss caused by high VSWR on the feed line. The SGC Smartuner is the heart of an all-band, high performance antenna system. Fast automatic operation requires no operator intervention and operates with any HF radio.

Features include: couplers to automatically tune just about any antenna (8 feet minimum) for 3 to 500 watts (depending on tuner model) from 1 to 60 MHz. The SGC Smartuner family uses microprocessor control of a pi or L network to match virtually any load to any transceiver.

Requiring only 13.6 VDC, the tuners are ideal for mobile as well as base station users. Their lightweight, slim design and universal mounting plate allow for quick and easy installation in any location. The weather proof design allows outdoor mounting and gives maximum possible multiband performance from your antenna. Every SGC product is backed by a 5 year warranty.

Antenna Coupler Systems

QMS-7

$1299.95
HRO Price

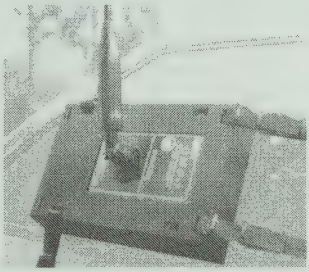
NEW!

The QMS-7 is an HF antenna tuner system that can be strapped to the side of your vehicle. Mounting the coupler and antenna outside the vehicle reduces engine noise and interference and eliminates feed loss.

The package includes an SGC SG-231 automatic antenna coupler, an SG-307 extended full range antenna, and a special exterior, waterproof, mounting package. It can be quickly installed and easily moved from vehicle to vehicle.

The SG-231 Smarttuner is the working brain of the QMS-7 system. It automatically tunes just about any antenna (7' minimum) from 1 to 60 MHz with 3 to 100 watts.

The SG-307 is a durable, lightweight antenna designed for mobile use. It is a single fiberglass whip, helically wound with primary resonance at 8 MHz and secondary at 25 MHz.



QMS-2

$999.95
HRO Price

The QMS-2 provides a configuration alternative to the QMS-7. The QMS-2 uses the SG-230 Smartuner plus the 9 foot SG-303 antenna. It supports 200 watts and covers 1.8 to 30 MHz.

QMS-3

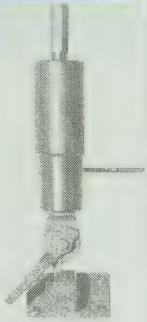
$2299.95
HRO Price

The QMS-3 is another Smarttuner – mobile antenna combination using the SG-235 antenna tuner and the 9 foot SG-303 antenna. The QMS-3 handles 500 watts and covers 3.0 to 30 MHz.

HF Mobile Antennas

SG-303

With Ratchet Mount
$479.95
HRO Price



The SG-303 high performance mobile antenna is built to operate in rough terrain and extreme climatic conditions. The light weight, low cost SG-303 operates between 1.8 and 30 MHz with power handling from 3 to 500 watts PEP. Nine feet in length, it consists of two sections of helically wound whip mounted on a sturdy professional weatherproof rubber spring.

It mounts on an adjustable ratchet mechanism. The base adjusts for the best attachment to the vehicle and the antenna ratchet permits orienting the whip from vertical to horizontal. It is a perfect match for the SGC line of antenna couplers. It has a lifetime warranty.

SG-307

$319.95
HRO Price

The SG-307 is a durable, lightweight mobile antenna. Its dual element design makes it a high efficiency radiator. The single fiberglass whip, helically wound, has a primary resonance at 8 MHz and a secondary resonance at 25 MHz. It has a frequency range of 1 to 60 MHz and supports up to 150 watts PEP or CW. At frequencies under 25 MHz, the SG-307 will outperform a conventional 9-foot whip.

Dipole Antenna

SG-103

$299.95
HRO Price

The SGC broadband dipole provides optimum performance for a frequency range of 2 to 28 MHz and handles 150 watts PEP. The length is 90 feet. It has an impedance of 50 ohms and uses a SO-239 connector.

SGC Tuners

	HRO Prices
SG-230	$499.95
SG-230 PRO	$899.95
SG-235	$1399.95
SG-231	$529.95

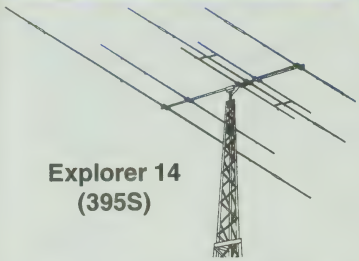
Model	Max Power Watts	Antenna Lgth >3.3 MHz (feet)	Antenna Lgth<3.3 MHz (feet)
SG-230	200	8 to 80	25 min
SG-230 PRO	200	8 to 80	25 min
SG-235	500	23 min	23 min
SG-231	100	8 min	8 min

hy-gain by Telex

Your Performance Advantage

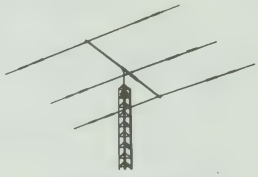
Innovation • Value • Customer Service

HF Tribanders



Explorer 14 (395S)

Give your sold state transceiver a break; the Explorer 14 is the most broadbanded HF antenna around. Our exclusive Para-Sleeve design optimizes bandwidth without a tuner. Best performance on a 14' boom. A 30 or 40 meter add-on kit is available for added coverage.
HRO Price $469.95



TH3 Mk4 (388S)

The classic design in a small tribander. Performance and value in one small package. Perfect for home stations, this antenna is the choice for DXpeditions too!
HRO Price $379.95

TH7 DX (391S)

Nothing performs like the world famous TH7 DX! This high performance tribander gives you the competitive edge you want on 10, 15, and 20 meters.
HRO Price $729.95

DB-1217

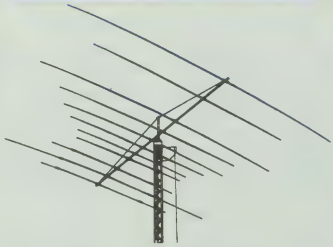
The DB-1217 features a 14 foot boom in 4 pieces ideal for Dxpedition packaging. The antenna covers the 12 and 17 meter bands, handles full legal power and uses the standard Hy-Gain rugged boom to mast clamp. **HRO Price $349.95**

HF Vertical

DX 77 Advanced Vertical Windom

The unique design of this vertical antenna provides no-compromise performance without the need for ground radial wires. The superior mechanical design, high power capabilities and 55% greater bandwidth than competitive verticals on 20 and 40 meters make it an exceptional value. Covers the Ham bands 10 through 40 meters, including the WARC bands. Automatic band switching and low angle of radiation for DX. Features double-wall tubing, steel mast clamps and stainless steel hardware. 29' tall, it has a new easy-tilt mount making it convenient to lower for tuning. May be mounted on a pole, chimney, rooftop, or deck, or used for portable operation. Comes with Telex's 2 year limited antenna warranty. **HRO Price $379.95**

Five HF Bands



TH11 DX (398S)

A unique design giving you the frequency coverage of a log periodic plus the performance of a monobander. Covers 10, 12, 15, 17, and 20 meters with one boom and feedline.
HRO Price $929.95

VHF/UHF Base Antennas

2m / 440 MHz V42R (331S)

Expand your capabilities with this dual band performer. This omni-directional antenna gives you 3 dBd gain on 2 meters as well as 5 dBd on 70 cm. Comes complete with a type N connector.
HRO Price $149.95

440 MHz V4R (337S-1)

You can't beat this antenna! With wind survivability to 220 M.P.H., the V4R provides 3 dBd gain with a wide coverage pattern. It features two colinear 5/8 wave antennas fed in phase along with 2 sets of radials that decouple the lower radiator from the mast. Tunable from 400-475 MHz. Comes with a type N connector.
HRO Price $98.95

2m V2R (335S-1)

A rugged antenna for 2 meters, the V2R provides 3 dBd gain with a wide coverage pattern. It features two collinear 5/8 wave antennas fed in phase along with 2 sets of radials that decouple the lower radiator from the mast. Tunable from 138-175 MHz with wind survivability to 120 M.P.H.
HRO Price $96.95

6m V-6R

The V-6R antenna design is based on 2 collinear 5/8 wave vertical radiators and covers 51 to 54 MHz. The antenna has a 500 watt enclosed coil and two sets of 1/4 wave radials which provide complete mast decoupling and optimum pattern and gain. The rugged design will withstand wind speeds up to 80 MPH. The V-6R also features a DC ground for lightning protection. **HRO Price $179.95**

B&W

Broadband Folded Dipoles

Barker & Williamson's unique patented design brings you true continuous coverage of 1.8 - 30 MHz in an antenna only 90 feet in length! These very low noise dipoles have an SWR of less than 2:1 from 1.8-30 MHz.

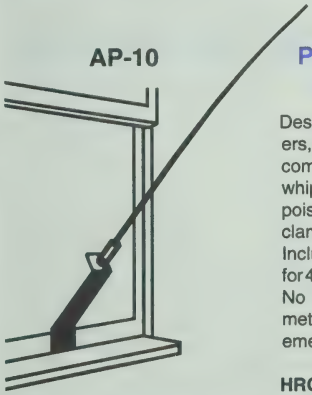
Install as flat, inverted vee, or sloper. Antennas come completely assembled. They are constructed of #14 stranded wire, copperweld or stainless steel. 2KW PEP SSB / CW ICAS. 50 Ohm input with SO-239. No antenna tuner required.

BWD-1.8-30	1.8-30 MHz	90 feet	Copperweld Wire	$179.95
BWD-1.8-30	1.8-30 MHz	90 feet	Stainless Steel Wire	$269.95
AC-5-30	5-30 MHz	65 feet	Copperweld Wire	$189.95
ACS-5-30	5-30 MHz	65 feet	Stainless Steel Wire	$269.95
AC-2-22	1.8-22 MHz	185 feet	Copperweld Wire	$279.95

Trap Dipole Antennas

Choose the longest antenna that will fit your property. It will cost less and have wider bandwidths. All Barker & Williamson dipoles are made from rugged #14 stranded copperweld wire for strength and conductivity. All antennas will handle 1KW PEP. These dipoles may be installed as inverted vee or horizontally. Assembly required.

AS-160	160,80,40,20 M	137 feet	3 traps / leg	$159.95
AT-110	80,40,20,15,10 M	110 feet	Economy Unit	$99.95
AXS-160	160,30 M	96 feet	1 loading coil / leg	$99.95
AS-80	80,40,20 M	78 feet	2 traps / leg	$119.95
AXS-80	80,40,15 M	65 feet	2 traps / leg	$119.95
AT-55	40,20,15,10 M	55 feet	Economy Unit	$87.95
AS-40	40,20,15,10 M	40 feet	3 traps / leg	$159.95
AS-20	20,15,10 M	20 feet	2 traps / leg	$119.95



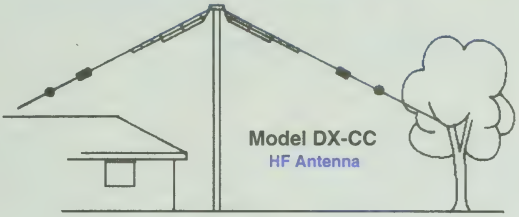
300 Watt Portable Antenna for 2-40 Meters

Designed especially for renters, travelers and restricted communities. Stainless steel whip (51"), insulated counterpoise wire, aluminum bracket/clamp and 10 feet of coax. Included set of loading coils for 40, 30, 20, 15 and 10 meters. No coils needed for 6 or 2 meters. Also useful as an emergency antenna.

HRO Price $69.95

ALPHA DELTA

HF Antennas for Limited Space



All the limited space antennas use stainless steel hardware where required, are fully assembled, and are manufacturered to withstand severe weather. SO-239 connectors.

Model DX-CC: A no trap 80-40-20-15-10 meter dipole. 82' long. **HRO Price $109.95**

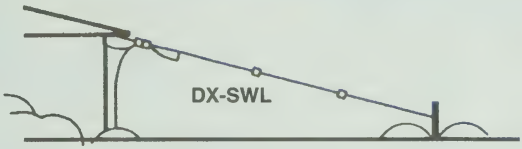
Model DX-A: A quarter wave twin sloper for 160-80-40 meters. One leg is 67' and the other 55'. Installs as an inverted-V. **HRO Price $59.95**

Model DX-B is a single wire, high performance quarter wave sloper antenna for 160, 80, 40 and 30 meters. For limited space, the antenna requires only 60 feet for installation, should be used with a wide range antenna tuner. Pre-assembled and pre-tuned. Has stainless steel hardware, 12 gauge insulated copper wire and the Alpha Delta "ISO-RES" RF choke coils, 50 ohm coax feed. Full legal power. **HRO Price $69.95**

Model DX-DD: A no trap 80-40 meter dipole. 82' long. **HRO Price $89.95**

Model DX-EE: A no trap 40-20-15-10 meter dipole. Only 40' long. **HRO Price $99.95**

Shortwave Listening Antennas

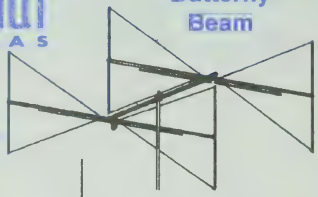


The **DX-SWL** model is tuned for the most popular SWL bands (13, 16, 18, 19, 21, 25, 31, 41, 49, 90 and 120 meters). It can be used as a multi-band transmit antenna with the appropriate antenna tuner. Length is 60 feet. Requires a single support. Standard coax connects antenna to your radio. Feed point is 50 ohms. SO-239 connection. **HRO Price $79.95**

The multi-element **DX-ULTRA** has extremely low-noise performance. Tapered wing design allows broadband operation. Configure as dipole, inverted-vee, or sloper. Covers MW, tropical, SW, government, military, embassy, maritime, aircraft, and commercial frequencies. 80 feet long. Made with ISO-RES inductors and parallel wire elements. Uses the Delta-C center insulator, Delta-CIN end insulators, and 12 gauge solid copper wire with grey PVC insulation. Elements are separated by grey PVC rod. **HRO Price $109.95**

butternut ANTENNAS

Multi-band HF Verticals



HF9V-X

More efficient than conventional trapped designs or "halfwave" verticals, the exclusive Butternut Differential Reactance Tuning system allows more of the antenna to be active on each band, for greater bandwidth, lower radiation angle, and superior performance!

- 9 bands, 80 thru 6 meters.
- No-radial operation with CPK counterpoise.
- Highly efficient 26 foot vertical radiator.

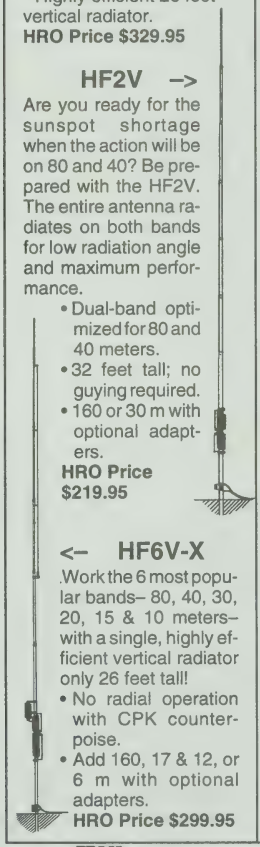
HRO Price $329.95

HF2V –>

Are you ready for the sunspot shortage when the action will be on 80 and 40? Be prepared with the HF2V. The entire antenna radiates on both bands for low radiation angle and maximum performance.

- Dual-band optimized for 80 and 40 meters.
- 32 feet tall; no guying required.
- 160 or 30 m with optional adapters.

HRO Price $219.95



<– HF6V-X

Work the 6 most popular bands– 80, 40, 30, 20, 15 & 10 meters– with a single, highly efficient vertical radiator only 26 feet tall!

- No radial operation with CPK counterpoise.
- Add 160, 17 & 12, or 6 m with optional adapters.

HRO Price $299.95

HF5B

Five popular bands in a single lightweight 2 element beam antenna. Ideal where space is limited, the HF5B provides up to 3 dBd on 20, up to 5 dBd on 15, 12, and 10. Light enough to turn with a TV rotator, the HF5B has a 6 foot boom and a wingspan of only 12.5 feet. Weighs only 20 pounds; surface area is 3 square feet. **HRO Price $449.95**

Vertical Antenna Accesories

TBR-160S

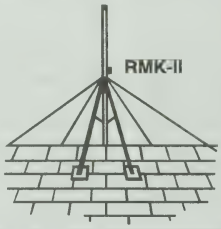
CPK Counterpoise kit for HF9V-X, HF6V-X. Allows operation with no radial system.

TBR-160S 160 Meter kit for HF9V-X, HF2V or HF6V-X. Not recommended for CPK.

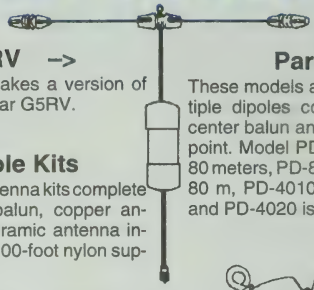
STR-II Resonant radial kit for above ground mounting of Butternut verticals.

RMK-II-Roof mounting kit. Includes STR-II.

A-17-12 Adapter for 17 and 12 meters for 6 band Butternut verticals.



VAN GORDEN



G5RV –>

VanGorden makes a version of the very popular G5RV.

Dipole Kits

Wire dipole antenna kits complete with a Hi-Q balun, copper antenna wire, ceramic antenna insulators, and 100-foot nylon support rope.

Standard Length

Models D-10 for 10 meters, D-15 for 15 m, D-20 for 20 m, D-40 for 40 m, and D-80 for 75 / 80 m.

Shortened

Models SD-40 for 40 m and SD-80 for 75 / 80 m.

Parallel

These models are made of multiple dipoles connected at the center balun and fed at this one point. Model PD-8010 is for 10-80 meters, PD-8040 is for 40 and 80 m, PD-4010 is for 10-40 m, and PD-4020 is for 20-40 m.

Baluns / Insulators

Egg insulators. Center and end insulators. 1:1 and 4:1 Baluns.

Van Gorden Antennas

Model	Type	Band	Length ft (m)	Power PEP	Wire Size	HRO Price
D-10	Standard Dipole	10	16(4.9)	2KW	#14	$26.95
D-15	Standard Dipole	15	22(6.7)	2KW	#14	$27.95
D-20	Standard Dipole	20	33 (9.9)	2KW	#14	$28.95
D-40	Standard Dipole	15/40	66 (19.8)	2KW	#14	$29.95
D-80	Standard Dipole	75/80	130 (39)	2KW	#14	$32.95
All-Bander	Standard Dipole	160-10 *	134 (40.8)	2KW	#14	$29.95
Shorty	Dipole	160-10 *	70(21)	2KW	#14	$44.95
SD-40	Shortened Dipole	40	45 (13.5)	2KW	#14	$34.95
SD-80	Shortened Dipole	75/80	90 (27)	2KW	#14	$36.95
PD-8010	Parallel Dipole	10 to 80	130 (39)	2KW	#14	$44.95
PD-8040	Parallel Dipole	15/40/80	130 (39)	2KW	#14	$40.95
PD-4010	Parallel Dipole	10, 20, 15/40	66 (19.8)	2KW	#14	$38.95
PD-4020	Parallel Dipole	20, 15/40	66 (19.8)	2KW	#14	$34.95
G5RV	Dipole	3.5-30 MHz	102(31)	2KW	#14	$49.95

* Antenna tuner required

Classic Tribanders

Force 12

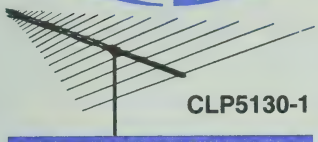
C Series

Force 12 has the finest lineup of antennas covering the 20-15-10 bands with a single feedline. The antennas have a VSWR of about 2.8:1 and are easily matched with any tuner. All are trapless and are acclaimed as outperforming all the various trapped antennas.

C-3	20-10 m, 18' boom.
C-3S	20-10 m, 12' boom.
C-4	40-10 m, 18' boom.
C-4S	40-10 m, 12' boom.
C-3SL	20-15-10 m (3-element 20, 3-element 15, 4-element 10, with separate feedlines for maximum versatility).
C-4XL	40-10 m, 30' boom (with 2 elements on 40).
C-4SXL	40-10 m, 23' boom (with 2 elements on 40).

Call HRO for Quotes

CREATE



CLP5130-1

Log Periodic Antennas

The **CLP5130** antennas are high gain, wide band VHF/UHF log periodic beams for horizontally polarized base station use. Covers amateur bands from 50–1300 MHz, FM broadcasting, scanning, VHF / UHF TV, air band communications, government application, and business bands.

Forward gain is 10 to 12 dB—10 to 16 times the gain of a nondirectional discone type antenna. The VSWR is less than 2.0:1 across the band.

The high-quality aluminum antennas have a boom design that allows movement of the phasing line. Distortions in the vertical and horizontal planes are minimized and element adjustment is not necessary. The boom-to-mast bracket is made of a lightweight and rugged magnesium alloy.

	CLP5130-1	CLP5130-2
Frequency	50-1300 MHz	108-1300 MHz
No. Elements	23	19
Power	500W PEP	500W PEP
Forward Gain	10-12 dBi	10-12 dBi
Front/Back	15 db	15 db
Longest eleme	9' 10"	4' 6"
Boom length	5' 9"	4' 6"
HRO Price	$419.95	$279.95

DIAMOND ANTENNA

D-130J Super Wideband Discone

Monitor 25-1300 MHz. Transmit on 50, 144, 430, 1200 MHz. All stainless steel. Input power 200 watts. Impedance: 50 ohms. VSWR: 1.5:1. Length: 1.7 meters. Mounts on 1" to 2" masts. **HRO Price $99.95**

Swiech Communications Systems

Beams for 2 Meters and 1.2 GHz

The **COY2M3EL** is a black anodized, light weight 3 element beam antenna for 2 meters. It provides a 6.1 dB forward gain and an H-plane beam-width of 80 degrees. The bandwidth is 144-148 MHz with an SWR <1.7 at the band edges. Impedance is 50 ohms and it handles 200 watts. A great antenna for packet, public service, camping, T-hunting, Field Day or any portable operation.

	HRO Price
COY2M3EL	$64.95
COY2M4EL	$74.95
COY1.2 Beam	$109.95

The Forbes Group

Ventenna™

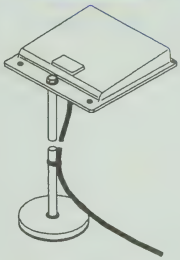
Can you spot the antenna?

Neither can your neighbors

At last a solution to antenna restrictions. The Ventenna™ quickly slips over your existing vent pipe and your signal really gets out! It is nearly invisible and is one of the most rugged antennas made. The **VT-27** dual-band is for 2 meters and 440 MHz. Single band models are for 2 meters, 220 MHz and 440 MHz.

Model	Description	HRO Price
VT-14	2 meters	$49.95
VT-22	220 MHz	$49.95
VT-44	440 MHz	$49.95
VT-27	2 meter & 440 MHz	$74.95

M²



2m SQLOOP

Shown with Optional Mast and Magnet Mount

HRO Price $59.95

The 2 meter omnidirectional, horizontally-polarized SQLOOP is for mobile or base use. It is a flat 8" square, reduced size loop, cut out of one piece of aluminum to minimize loss. The basic 2 ohm impedance of the loop is efficiently balance fed with an inductive, magnetically shielded coupling loop.

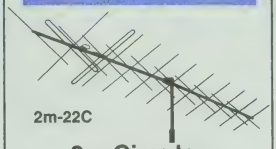
EB-144 2M Eggbeater

HRO Price $112.95

The Eggbeater offers exciting new performance characteristics for fixed and mobile operations. The EB-144 produces smooth omnidirectional horizontal polarity at the horizon. Above the horizon, the pattern transforms to right hand circular off the top making it a natural for OSCAR use. No rotation or steering is required.

KLM

Oscar



2m-22C

2m Circular

Circular polarized models for 2m: **2M-14C** and **2M-22C**. Excellent for Oscar. Circular polarity switch included with each antenna.

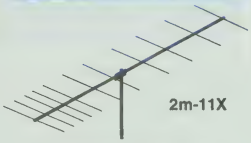
440 MHz Circular

Circular polarized models for 440 MHz: **435-18C** and **435-40CX**. Excellent for Oscar. Circular polarity switch included with each antenna.

Fiberglass Masts

To provide proper horizontal boom insulation for OSCAR operation, KLM has two fiberglass masts: one 5 feet; the other 7.5 feet. Care should be taken in selecting the elevation rotator. The masts are too large for the Alliance U110 which is sometimes used. The masts will work with the Yaesu rotators.

VHF / UHF Beams



2m-11X

2-Meter Beams

Models 2M-16LBXM, 2M-11, 2M-4X.

440 MHz Beams

Models 432-16BA, 432-30LBX, 440-14, & 440-6.

MAXRAD

These quality VHF / UHF antennas are available. Please call for models, specifications, & quotes.

CUSHCRAFT
COMMUNICATIONS ANTENNAS

World Ranger Series

Multi-Band Beams

The four-element A4S with stainless steel hardware outperforms other beams in day-to-day operation and the tough competition of contests. It has achieved the success of DXCC in only two days. The combination of precisely tuned traps with excellent spacing to element length ratios make the A4S a proven winner. Designed for easy assembly, the A4S is light weight, built to last and has a clean profile to reduce wind load. The A3S, with all stainless steel hardware, is the most popular three element, three-band beam available today. It has plenty of gain and good front-to-back ratio. The A3S can be mounted on a lightweight tower and rotator in a very small space. Rugged design features insure many years of trouble-free operation.

A3S	10, 15, 20 m, 3-element
A3SDX	Smaller A3S for easy travel
A4S	10, 15, 20 m, 4-element

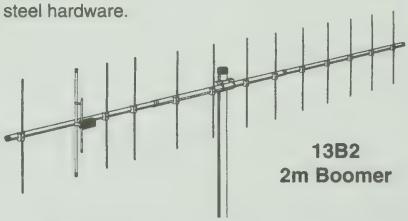
World Ranger Four-Band Upgrade Kits

Convert Cushcraft A3S and A4S beams to four bands with this simple add-on kit. You'll be able to work 40 meter DX! With an easy adjustment, the 10 MHz WARC band is also available.

A743	30 or 40 meter kit for A3S
A744	30 or 40 meter kit for A4S

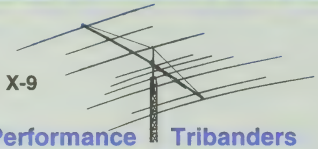
VHF / UHF Boomers

The Cushcraft Boomer Series of high performance Yagis has been the industry standard for more than two decades. They have established new VHF / UHF distance records and their computer-based design has become the favorite choice for SSB, FM and packet. All boomers have stainless steel hardware.



The **13B2** is the best choice for performance across the 2 meter band. Its 15' boom makes it the most popular 2 meter Yagi worldwide.

Big Thunder Series



Performance Tribanders for 10, 15, 20m DX

The X9 and X7 triband Yagis are setting new standards in radiating performance and mechanical reliability. Computer modeling technology has created a superior electrical design with elegant mechanical hardware and assembly techniques. The yagis are designed to 100+ MPH wind survival with a 1.25 safety factor. Traps were eliminated from the driven elements and reflectors using 4L log cell design. Traps on the lower current directors increase gain and sharpen pattern. Optional add-on kits for 40 meters are available (X740 and X790 for the X7 and X9 respectively).

VHF / UHF Yagis

6 Meter Yagis

Enjoy the new excitement of the 6 meter band with an S-series yagi. Computer aided modeling and stainless steel hardware were used by Cushcraft to optimize the performance of our popular 6 meter yagis.

A50-3S	3 element	50-54 MHz	6' boom
A50-5S	5 element	50-54 MHz	12' boom
A50-6S	6 element	50-54 MHz	20' boom

2m / 70cm Dual Band

Increase your range by selecting one of our Cushcraft dual band Yagis. Direct more of your output power when transmitting while reducing interference and increasing signal strength when receiving. Select the antenna for your station depending on your distance requirments.

A270-6S	144-148 / 430-450 Mhz 6 element 2.8' boom 7.8 dB
A270-10S	144-148 / 430-450 MHZ 10 element 6.2' boom 10 dB

Ringo II Base Antennas

Ringo Ranger II antennas have more gain, less wind load, and better mechanical strength than most other antennas. You'll find FM repeater or simplex and packet operation more satisfying with this amazing antenna. Three 5/8 wave radiating elements and an adjustable 1/8 wave phasing stub give 7 dB gain over a 1/4 wave whip. The antenna has RF decoupling radials and is DC grounded for lightning protection.

ARX-2B	135-160 MHz	14' high
ARX-220B	222-225 MHz	9.3' high
ARX-450B	435-450 MHz	4.9' high

HF Vertical

R 7000

R7000 Upgradable 7 Band Vertical

Now add 80 Meters with R80 Kit

As the successor to the popular R-7, the R7000 includes the ability for you to add on 80 meters with the optional R-80 kit. This vertical design provides you 30 and 40 meters with *No Ground Radials!* Only 24 feet tall, the small footprint and ground independence give you "mount-anywhere" flexibility. Assembly is a snap.

Controlled inductance traps make for easy installation and great all-weather performance. The AL6063 cover design completes the LC circuit for stable capacitance and high power handling.

Performance is great. The low angle of radiation gets you through the pile-ups. Automatic frequency selection and 7 short counterpoise rods let you concentrate on DXing, contesting, or rag-chewing from your apartment, condo, or motorhome.

NEW!

R6000 20 Meter - 6 Meter Vertical

Please call for more information on this new product.
Suggested List Price $365.00
HRO Price $299.95

Cushcraft HF Antennas

Model	Bands	Ele	Max F/B dB	Min SWR	Boom Length		Boom Diameter		Longest Ele(Ht)		Turning Radius		Max Mast Dia		Wind Surf Area		Shipping Weight		HRO Price
					FT	M	IN	CM	FT	M	FT	M	IN	CM	SQFT	SQMT	lbs	kg	
X7	20 15 10 meters	7	30	1.1:1	18	5.5	2.5	6.4	37.2	11.3	20	6.1	2 1/2	6.4	7.9	0.73	60	27	$499.95
X9	20 15 10 meters	9	30	1.1:1	28	8.5	2.5	6.4	36.5	11.1	22	6.6	2 1/2	6.4	9.4	9.2	85	38	$799.95
R7000	40 30 20 17 15 12 10 meters	1		<1.2:1					24	7.3			2 1/8	5.4	2	0.19	21	9.5	$379.95
R80 Kit	80m for R7000	1		<1.2:1					34.5	10.5			2 1/8	5.4	4	0.37	7.5	3.4	$129.95
A3S	20 15 10 meters	3	25	<1.2:1	14	4.3	1.5	3.8	27.8	8.5	15.5	4.7	2	5.1	4.4	0.041	30	13.6	$329.95
A743 Kit	40m for A3			<1.2:1					35	10.7	15.5	4.7	2	5.1	0.06	0.06	7	3.2	$129.95
A3WS	17 12 meters	3	25	<1.2:1	14	4.3	1.5	3.8	25	7.6	14.4	4.4	2	5.1	4.1	0.38	26.5	12	$279.95
A103 Kit	30m for A3WS			<1.2:1					32	9.8	14.4	4.4	2	5.1	0.04	0.04	6	2.7	$109.95
A4S	20 15 10 meters	4	25	<1.2:1	18	5.5	2	5.1	32	9.8	18.4	5.6	2	5.1	5.5	0.51	38	17.2	$419.95
A744 Kit	40m for A4S			<1.2:1					35	10.7	18.4	5.6	2	5.1	0.3	0.03	7.5	3.4	$129.95
ASL2010	20 17 15 12 10 meters	8	20	<1.2:1	18	5.5	2	5.1	38	11.6	19.3	5.9	2	5.1	10.1	0.94	59	26.7	$749.95
TEN-3	10 meters	3	25	<1.2:1	8	2.4	1.4	3.5	18	5.5	9.8	3	2	5.1	2	0.19	10.5	4.8	$129.95
10-4CD	10 meters	4	30	<1.2:1	16	4.9	1.8	4.4	17.5	5.3	11.5	3.5	2	5.1	3.1	0.29	25	11.3	$239.95
15-4CD	15 meters	4	30	<1.2:1	20	6.1	2	5.1	23.3	7.1	15.4	4.7	2	5.1	4.5	0.42	31	14.1	$299.95
20-3CD	20 meters	3	30	<1.2:1	20	6.1	2	5.1	36	11	20	6.1	2	5.1	5.5	0.51	37	16.8	$389.95
20-4CD	20 meters	4	30	<1.2:1	32	9.8	2.1	5.4	36	11	23.8	7.3	2	5.1	8.1	0.75	57	25.8	$469.95
40-2CD	40 meters	2	20	<1.2:1	13	4	2.1	5.3	43	13.1	24	7.3	2	5.1	6.4	0.59	46	20.9	$449.95
D3	20 15 10 meters	1		<1.2:1					26	7.9	4	1.2	2	5.1	0.9	0.08	11	5	$189.95
D3W	17 12 meters	1		<1.2:1					34	10.4	5	1.5	2	5.1	0.9	0.08	13	5.9	$179.95
D4	40 20 15 10 meters	1		<1.2:1					36	11	5.5	1.7	2	5.1	1.3	0.12	15.5	7	$279.95
D40	40 meters	1		<1.2:1					42	12.8	6.5	2	2	5.1	1.7	0.16	15	6.8	$229.95
AR-10	10 meters	1		<1.2:1					17.6	5.4			1 1/4	3.2	1 2/3	0.16	5	2.3	$59.95

Call for Quotes on Cushcraft Antennas not shown

Cushcraft VHF / UHF Antennas

Model	Frequency Coverage	Ele	Max F/B dB	Conn	Polarization		Boom Length		Longest Ele(Ht)		Turning Radius		Max Mast Dia		Wind Surf Area		Shipping Weight		HRO Price
					Horz	Vert	FT	M	FT	M	FT	M	IN	CM	SQFT	SQMT	lbs	kg	
124-WB *	144-148	4	24	U	Y	Y	4	1.2	3.4	1	4	1.2	2	5.1	0.34	0.03	3.5	1.6	$69.95
13B2	144-148	13	26	U	Y	Y	15	4.6	3.4	1	8.9	2.7	2	5.1	1.8	0.17	9.5	4.3	$109.95
13B2N	144-148	13	26	N	Y	Y	15	46	3.4	1	8.9	2.7	2	5.1	1.8	0.17	9.5	4.3	$139.95
26B2	144-148	26	26	U	Y	Y	15	4.6	3.4	1	10.4	3.2	2	5.1	4.8	0.45	25	11.3	$339.95
17B2	144-145	17	26	N	Y	N	31	9.4	3.4	1	17.3	5.3	2	5.1	3.9	0.36	18	8.2	$179.95
224-WB *	222-225	4	24	U	Y	Y	3	0.09	2.2	0.7	3	0.9	2	5.1	0.23	0.02	2.5	1.1	$66.95
225-WB	222-225	15	24	U	Y	Y	10	3	2.2	0.7	5.8	1.8	2	5.1	0.95	0.09	6.5	2.9	$124.95
719-B	430-450	19	25	N	Y	Y	13.5	4.1	1.2	0.4	7.3	2.2	2	5.1	1.2	0.11	7.5	3.4	$129.95
729-B	430-440	29	25	N	Y	N	22.2	6.8	1.2	0.4	12.5	3.8	2	5.1	2.2	0.2	11.5	5.2	$189.95
A50-3S	50-54	3	20	U	Y	N	6	1.8	9.8	3	6	1.8	2	5.1	1.8	0.17	8.5	3.9	$94.95
A50-5S	50-54	5	24	U	Y	N	12	3.7	9.8	3	7.5	2.3	2	5.1	2.7	0.25	13	5.9	$139.95
A50-6S	50-54	6	26	U	Y	N	20	6.1	9.8	3	11	3.4	2	5.1	4.5	0.42	22	10	$239.95
617-6B	50-51	6	30	U	Y	N	34	10.4	9.5	2.9	17.7	5.4	2	5.1	4.8	0.45	32	14.5	$319.95
A148-3S	144-148	3	25	U	Y	Y	2.8	0.9	3.3	1	2.8	0.9	2	5.1	0.27	0.03	3	1.4	$45.95
A144-10SN	144-146	10	24	N	Y	Y	12	3.7	3.3	1	6	1.8	2	5.1	1.2	0.11	7	3.2	$89.95
A148-10S	144-148	10	24	U	Y	Y	12	3.7	3.3	1	6	1.8	2	5.1	1.2	0.11	6	2.7	$79.95
A148-20S	144-148	20	24	U	Y	Y	12	3.7	3.3	1	6.6	2	2	5.1	2.8	0.26	15	6.8	$199.95
A148-20T	144-148	20	20	U	Y	Y	10.8	3.3	3.3	1	6.8	2.1	1.5	3.8	1.4	0.13	7.5	3.4	$99.95
A430-6SN	430-440	6	18	N	Y	Y	2.9	0.09	1.1	0.3	2.9	0.9	2	5.1	0.3	0.03	2.5	1.1	$89.95
A449-6S*	440-450	6	18	U	Y	Y	2.9	0.09	1.1	0.3	2.9	0.9	2	5.1	0.3	0.03	2.5	1.1	$56.95
A430-11S	430-440	11	20	U	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	0.39	0.04	3.5	1.6	$81.95
A430-11SN	430-440	11	20	N	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	2/5	0.04	3.5	1.6	$95.95
A449-11S	440-450	11	20	U	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	0.39	0.04	3.5	1.6	$81.95
A270-6S	144-148	3	20	U	Y	Y	2.8	0.09	3.4	1	2.8	0.9	2	5.1	0.3	0.03	3.5	1.6	$59.95
	430-450	3	18	U															
A270-10S	144-148	5	20	U	Y	Y	6.2	1.9	3.4	1	6.2	1.9	2	5.1	0.73	0.07	5	2.3	$88.95
	440-450	5	18	U															
AR-6	50-54			U	N	Y			10.1	3.1			1.25	3.2	0.37	0.03	4	1.8	$67.95
AR-2	135-160			U	N	Y			3.9	1.2			1.25	3.2	0.21	0.02	2	0.9	$47.95
AR-450	440-460			U	N	Y			1.4	0.42			0.75	0.88	0.1	0.01	2	0.8	$39.95
ARX-2	137-160			U	N	Y			9.3	2.8			1.25	3.2	0.33	0.03	2.5	1.1	$46.95
ARX-2B	134-164			U	N	Y			14	4.3			1.25	3.2	0.5	0.05	3.5	1.6	$55.95
ARX-220B	220-225			U	N	Y			9.3	2.8			1.25	3.2	0.3	0.03	3	1.4	$69.95
ARX-450B	435-450			U	N	Y			5	1.5			1	1.5	0.2	0.02	2	0.9	$59.95

HUSTLER®

Multi-band HF Verticals

6-BTV / 5-BTV / 4-BTV

Models 6-BTV (10, 15, 20, 30, 40, 75 / 80 meters), 5-BTV (10-80 meters), and 4-BTV (10-40 meters) for base stations. All of these vertical antennas allow full legal limit on SSB or CW. The antennas are constructed of 1 1/4" heavy wall, high strength aluminum. Feed with 50 ohm coax. VSWR 2:1 or better at band edges on 10-40 meters and up to 100 kHz on 75 / 80 meters.

30-MTK

Add the 30 meter band to the 4-BTV or 5-BTV with the 30-MTK. This will provide full band coverage of the 30 meter band and will not affect normal operation of the other bands. The modification is easy to install with all hardware required included. **HRO Price $41.95**

2m Verticals

G7-144

The G7-144 is designed for fixed station or repeater operation. The antenna provides 7dB gain with an extremely low angle of radiation. It is constructed of high strength aluminum and fiberglass using stacked 5/8 wave radiators. Uses a type "N" connector.

G6-144B

The G6-144B is a 6dB gain antenna for base or repeater use. The antenna is totally self supporting and is constructed of high-strength aluminum. Uses an SO-239 connector.

220 & 440 Verticals

G7-220

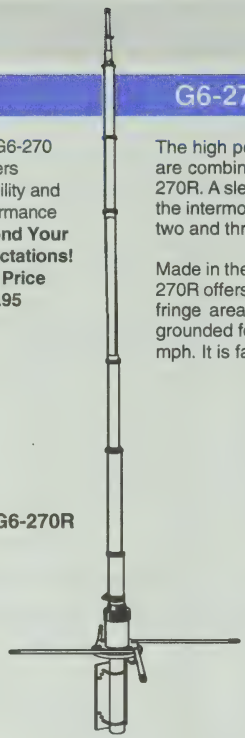
The G7-220 is of similar design and construction as the 2 meter G7-144. It is designed for base or repeater operation, provides 7dB of gain and is constructed of high-strength aluminum and fiberglass. Uses a type "N" connector.

G6-440

The G6-440 is a 6dB gain antenna for base or repeater usage for the 440 MHz band. It is provided with the vertical component assembled. The antenna is constructed from high-strength aluminum and fiberglass. Uses a type "N" connector.

G6-270R Dual Band

The G6-270 delivers reliability and performance **Beyond Your Expectations! HRO Price $169.95**



The high performance of our well known G6-144 and G6-440 are combined in our 2 m / 440 dual band vertical, model G6-270R. A sleek, one piece tapered fiberglass radome eliminates the intermodulation and mechanical problems associated with two and three piece UHF radome designs.

Made in the U.S.A. of high quality American materials, the G6-270R offers 6 dBd gain (8.1 dBi) on both bands for outstanding fringe area performance. The antenna is shunt-fed and DC grounded for lightning protection and will survive winds to 100 mph. It is factory tuned for quick and easy installation.

Electrical

Max. Power:	200 watts
Gain:	6 dBd VHF 6 dBd UHF
Bandwidth:	3 MHz VHF 10 MHz UHF
Design:	5/8 over 5/8 VHF 4 x 5/8 UHF Shunt-fed D.C. Ground
Termination:	Type N female

Mechanical

Length:	100 inches
Weight:	6 lbs
Wind Survival:	100 mph
Mounting:	Hardware included for 1-1/2" mast. Mounting plate will accept 2" U-bolts (U-bolts not included)

Hustler Antennas

Model	Bands	Mx Gn	VSWR	Top Hat lgth in (mm)	Height ft (m)	Boom Dia in (mm)	Max Mst in (mm)	Wind load lbs (kg)	Ship Wgt lbs (kg)	HRO Price
6-BTV	10-30-80 m	-	1.2:1	20.3 (506)	24 (7.2)	1.3 (31.3)	1.5 (38.1)	31 (14.1)	17	$189.95
5-BTV	10 to 80 m	-	1.2:1	20.3 (506)	25 (7.5)	1.8 (43.8)	1.5 (38.1)	29 (13.2)	17	$159.95
4-BTV	10 to 40 m	-	1.2:1	14.8 (369)	21.4 (6.4)	1.3 (31.3)	1.5 (38.1)	24 (10.9)	15	$139.95
G7-144*	2 m	7 dB	1.5:1	-	15.3 (4.6)	-	1.8 (43.8)	26 (11.8)	10	$169.95
G6-144B	2 m	6 dB	1.15:1	-	9.8 (2.9)	-	1.8 (43.8)	26 (11.8)	7	$129.95
G7-220*	220 MHz	7 dB	1.2:1	-	10.2 (3.0)	-	1.8 (43.8)	26 (11.8)	7	$169.95
G6-440*	440 MHz	6 dB	2.1:1	-	7.3 (2.2)	-	2.0 (50.8)	22 (10.0)	5	$169.95

* Type "N" Connector

Hustler VHF / UHF Mobile Antennas

Model	Band	Max Gain	SWR	Power	Length ft (m)	Weight lbs	HRO Price
RX-440	440 MHz	5.2 dB	1.2:1	100 W	2.3 (.72)	3	$24.95
CGT-144	2 m	5.2 dB	1.15:1	200 W	7.1 (2.1)	2	$51.95
RX-2	2m	3.4dB	1.5:1	100 W	4.2(1.3)	3	$24.95
FX-2	2m	3.4dB	1.5:1	100 W	4.2(1.3)	3	$33.95
SF-2	2 m	3.4 dB	1.2:1	100 W	4.2 (1.3)	1	$14.95
UGM	140-500 MHz	Unity				1	$21.95
SF-220	220 MHz	3.4 dB	1.2:1	100 W	2.6 (.78)	1	$14.95

Call Toll-Free For Hustler Products

VHF / UHF Mobiles

Collinear

The CG-144 and CG-220 are 5.2dB gain collinear antennas for 2m and 220 MHz respectively. These antennas mount with 3/8"x24 thread which will fit the standard Huster mounts. The CGT-144 and CGT-220 are supplied with a heavy duty trunk mount, 17' of coax and PL-259 connector.

5/8 Wave

Hustler manufactures two series of mobile antennas for 2m and 220 MHz and one for 440 MHz. The FX series comes with a heavy duty magnetic mount and the RX series has a standard duty mount. The antennas are base loaded with a 5/8 wave whip. The FX-2, FX-220, RX-2, RX-220 and RX-440 have black bases and chrome whips.

SF-2 / SF-220

These two antennas are for 2m and 220 MHz respectively. Each is a base-loaded 5/8 wave antenna. These antennas will mount to all the Hustler mounts.

UGM

A magnetic-mount antenna for the traveller. Trim it to operate as a 1/4 wave on 2m, 220 or 440. The mount is supplied with 7' of mini-coax and a BNC connector installed. Attaches directly to most hand-helds. The antenna has a chrome base and stainless steel whip.

HF Resonators

There are two types of resonators for HF operation. The **standard** units are rated to 400 watts SSB while the **supers** are rated at 1 KW SSB. In addition to the power differences, the usable band width of the Super resonators is 100 percent wider on some bands. See the resonator table below for details.

Mounting HF Mobiles

The HF resonators described require some consideration when mounting.

Mount

A bumper (BM-1) or ball type (C32, SSM-1 or SSM-2) mount is required. Magnetic or trunk type mounts will not hold the weight or wind load.

Mast

All of the resonators must be mounted on top of one of the Hustler masts (MO-1, MO-2, MO-3 or MO-4). The MO-1 and MO-2 hinge to allow for travel or low clearances. The MO-1 is for deck or fender mounting and folds at 15" above the base. The MO-2 is for bumper mounting and folds at 27" above the base. The MO-3 is a fixed length mast for use where it will not be necessary to fold over the antenna.

Hustler has a new mast, the **MO-4** for installations requiring a short mast. The mast is just 22 inches tall. Use standard resonators and whips on 40 and 75m. Use standard resonators on 10, 15 and 20 meters with the new whips provided with the MO-4.

Hustler Resonators

Model	Type	Band	Power SSB	Bandwidth 2:1 SWR	Weight lbs	HRO Price
RM-10	Standard	10 m	400 W	150-250 KHz	0.41	$15.95
RM-11	Standard	11 m	400 W	150-250 KHz	0.41	$15.95
RM-12	Standard	12 m	400 W	90-120 KHz	0.41	$15.95
RM-15	Standard	15 m	400 W	100-150 KHz	0.42	$15.95
RM-17	Standard	17 m	400 W	120-150 KHz	0.44	$21.95
RM-20	Standard	20 m	400 W	80-100 KHz	0.46	$21.95
RM-30	Standard	30 m	400 W	50-60 KHz	0.84	$24.95
RM-40	Standard	40 m	400 W	40-50 KHz	0.84	$24.95
RM-75	Standard	75 m	400 W	25-30 KHz	1.05	$26.95
RM-80	Standard	80 m	400 W	25-30 KHz	1.05	$26.95
RM-10-S	Super	10 m	1 kW	250-400 KHz	1	$23.95
RM-15-S	Super	15 m	1 kW	150-200 KHz	1.2	$24.95
RM-20-S	Super	20 m	1 kW	100-150 KHz	1.25	$28.95
RM-40-S	Super	40 m	1 kW	50-80 KHz	1.8	$35.95
RM-75-S	Super	75 m	1 kW	50-60 KHz	2.1	$49.95
RM-80-S	Super	80 m	1 kW	50-60 KHz	2.1	$49.95

Mounting Accessories

Trunk Mounts

Three trunk mounts are available (HLM, HOT and TLM). All bases accommodate the 3/8"x24 thread and come with 17' of low-loss coax with connectors installed. The mounts are for use with VHF and UHF antennas. Do **NOT** use with the HF mobile antennas.

The **HLM** is specifically for hatch and slanted back vehicles. It has a built-in 180 degree adjustable swivel. The **HOT** is an easy on/off base–just spin the knob. The mount cannot be removed while the trunk is closed. It also features a 180-degree swivel. The **TLM** requires no holes to install. It mounts on flat, horizontal surfaces. The **RVM** is for recreational vehicles.

Bumper Mount

Use the **BM-1** bumper type mount with all Hustler mobile antennas including HF. It uses two "J" bolts and a stainless steel strap that will fit bumpers up to 18". It will not fit the molded, plastic bumpers found on some vehicles. The mount comes with a stainless steel ball. Use the L14-144 (12 foot) or L14-240 (20 foot) coax sets to attach directly to the bottom of the ball mount.

Other Accessories

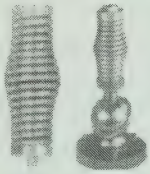
C-32	Chrome Plated Ball Mount	**$11.95**
SSM-1	Ball Mount and Spring	**$46.95**
SSM-2	Ball Mount	**$26.95**
SSM-3	Stainless Steel Spring	**$24.95**
RSS-2	Resonator Spring	**$9.95**
QD-2	Quick Disconnect	**$19.95**

Hustler Mounts

Model	Base Thread	Coax ft (m)	Swival	Weight lb	HRO Price
BM-1	3/8" x 24	optional	180°	2	$19.95
HOT	3/8" x 24	17 (5.1)	180°	1.9	$29.95
TLM	3/8" x 24	17 (5.1)		1.9	$20.95
HLM	3/8" x 24	17 (5.1)	180°	1.7	$22.95
RVM	3/8" x 24	17 (5.1)	180°	1.9	$20.95

Mobile Mounts

C-32



C-30 SSM-1

Hustler has a collection of mounts and accessories for attaching your antennas to your vehicle. The most common are described below.

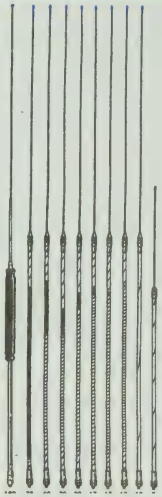
C-32 Chrome-plated ball mount
C-30 Chrome-plated spring
C-29 Stainless steel spring

SSM-1 Professional ball mount and spring
SSM-2 Ball mount
SSM-3 Stainless steel spring

L-14-144 Coax lead 12', PL-259 & lugs for Hustler mounts
L-14-240 Coax lead 20', PL-259 & lugs for Hustler mounts

Valor pro·am™

HF Mobile Antennas



PHF Series

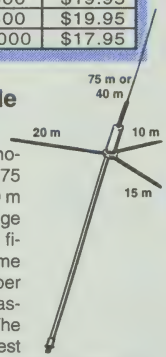
If you're ready to experience home station performance and great HF DXing on the open road, then gear up with Pro-Am's monoband PHF series mobile antennas.

The series consists of a black fiberglass lower section with integral coil and an adjustable (and removable) stainless steel whip (except for the PHF160). They are rated at 250 watts PEP and built to withstand hard use. Standard 3/8x24 threads. Total assembled length on all models 96" (except PHF6 at 58").

Model	Band (meters)	Band Width (kHz)	HRO Price
PHF160	160	12	$79.95
PHF75	75	36	$21.95
PHF40	40	60	$19.95
PHF30	30	100	$17.95
PHF20	20	150	$19.95
PHF17	17	175	$19.95
PHF15	15	200	$19.95
PHF12	12	300	$19.95
PHF10	10	500	$19.95
PHF6	6	1000	$17.95

Five-Band HF Mobile

Model AB5



Pro-Am's heavy-duty HF mobile slim-line antenna covers 75 m, 40 m, 20 m, 15 m, and 10 m amateur bands. Heavy-gauge copper wire wound on 3/8" fiberglass, with nickel-chrome brass fittings and 17-7 taper ground stainless steel whips assure dependable operation. The 4' whip is field tunable for lowest VSWR and double locked with stainless steel set screws. The 3/8-24 ferrule fits standard mobile mounts. Power rated at 250 watts P.E.P. Approximate 8' length. **HRO Price $109.95**

VHF / UHF On Glass

Glassmaster™ Mobile Antennas

Pro-Am's on-glass antennas feature a rugged copper plated whip with black finish and an interior coupler box with adjustable slot to fine tune the SWR. Power rated at 50 watts, they come with 14' of RG58 coax, a PL-259 connector, and mounting package for easy, no hole installation. The dual-band model GM270 covers 2 meters and 440 MHz.

		HRO Price
GM144	144-148 MHz 2 m	$19.95
GM270	2 m / 70 cm Dual Band	29.95

VHF / UHF Dual-Band

Cover-It-All Dual-Band Antennas

Cover It All with a 19" stainless steel whip antenna. Its 1-1/8" threads match Pro-Am's mounts and 3/4" hole Motorola TAD/TAE mounts. The antenna covers 144-148 MHz and 435-450 MHz with less than 2:1 SWR. Handles up to 150 watts.

		HRO Price
MO144-440	2m / 70cm Dual Band	$16.95

Magnetic Cover-It-All Dual-Band Antennas

These 2 meter and 70 cm dual band antennas that Cover It All come with magnetic mount kits. The 19" stainless steel whip has a 3" magnetic mount and 12' of RG58 cable with BNC or PL259 connector. Black finish.

		HRO Price
PM144-440 BN	BNC Connector	$16.95
PM144-440	PL-259 Connector	$14.95

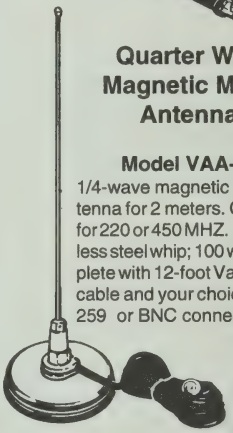
Mag Mount Antennas

MICRO-MAG™ Mobile Antennas

These ultra trim magnetic mount antennas feature a slender black-chrome whip and small "Candy Kiss" style base that is barely visible on an auto's roof.

Only 1-1/8 inches in diameter, the base is fitted with a super strong magnet that has been wind tested to 110 mph. These Micro-Mags are fully assembled, pretuned, low-profile 1/4 wave whips that are supplied with 9' of RG-174 coax with a BNC connector.

		HRO Price
MM144B	144-148 MHz	$29.95
MM450B	440-450 MHz	39.95
MM270B	2m/70cm dual band	39.95



Quarter Wave Magnetic Mount Antennas

Model VAA-002

1/4-wave magnetic mount antenna for 2 meters. Can be cut for 220 or 450 MHZ. 17-7 stainless steel whip; 100 watts; complete with 12-foot Valor-Flex™ cable and your choice of a PL-259 or BNC connector.

		HRO Price
VAA-002	PL-259 Connector	$23.95
VAA-002 BNC	BNC Connector	$27.95

VHF / UHF Mobile Antennas

Premium Series

When You Want the Best

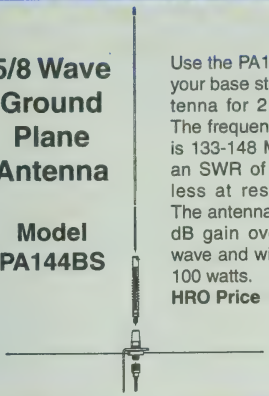
Model	Frequency	Gain	Lgth	Max Power	HRO Price
PR2000	142-148 MHz	3.2 dBd	48.5"	75 W	$34.95
PR2000C	142-148 MHz	5 dBd	77.5"	150 W	$44.95
PR2070	140-150 MHz 440-450 MHz	0 dBd 3.2 dBd	17.5"	150 W 100 W	$35.95

Valor has monoband and dual band professional quality antennas for the ham operator. All models have gold plated center connectors, UHF male connector, and PTFE (TEFLON) insulator.

2 Meter Base Antenna

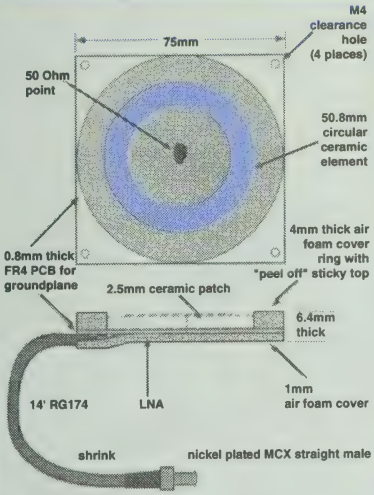
5/8 Wave Ground Plane Antenna

Model PA144BS



Use the PA144BS as your base station antenna for 2 meters. The frequency range is 133-148 MHz with an SWR of 1.5:1 or less at resonance. The antenna has a 3 dB gain over a 1/4 wave and will handle 100 watts. **HRO Price $19.95**

GPS Antenna

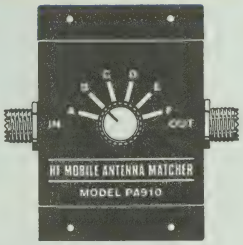


Patch Antenna

Model GPS-1

The GPS-1 is designed for GPS receiving at 1575.42 MHz. It is a slim line microstrip ceramic antenna just 75mm square. It has right hand circular polarization, an azimuth coverage of 360 degrees and an elevation coverage of 0 to 90 degrees. The LNA is a 27 dB gain with a noise figure of 1.15 dB. The GPS-1 weighs only 4.5 oz. It has four mounting holes and is supplied with 14' of RG-174U cable with a nickel plated straight MCX connector. **HRO Price $49.95**

Antenna Matcher

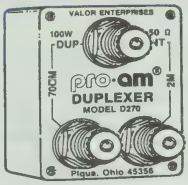


Mobile Model PA910

The PA910 is a compact mobile antenna matcher designed to be used at the base of your mobile HF whips for the 10-80 meter bands. It provides maximum power transfer so your SWR will be lower and your radio will run cooler and more efficiently. The unit is easy to use, just install in-line and adjust. **HRO Price $19.95**

Duplexer

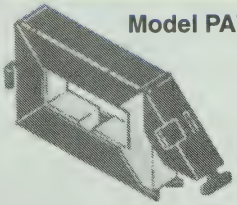
Model D270



Duplexer for two band antennas. Provides cross-band operation with a 2m / 70cm antenna. Power rated up to 100 watts with 50 Ohm impedance. **HRO Price $27.95**

RF Choke Kit

Model PA701

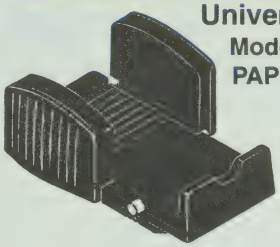


The PA701 eliminates RFI. It's as simple as winding the offending cable around the snap suppressing toroid. Chokes can be stacked as needed. Package of 4 covers .5 to 200 MHz. **HRO Price $14.95**

Portable Radio Cradle

Universal

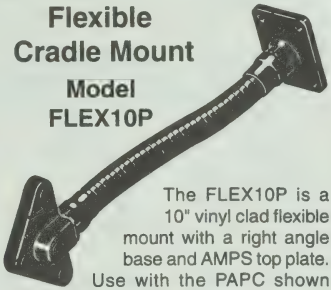
Model PAPC



The PAPC attaches AMPS plate of the FLEX10P or similar mounts. It securely holds portable radios from 1.375" to 2.875" wide. **HRO Price $9.95**

Flexible Cradle Mount

Model FLEX10P



The FLEX10P is a 10" vinyl clad flexible mount with a right angle base and AMPS top plate. Use with the PAPC shown above. **HRO Price $14.95**

Connectors

SO-239 Connector

Model 105AD

Mount Assembly: Heavy duty 3/8 SO-239 Connector, nickle plated. No chance of rust or corrosion. The brass hex is chrome plated. For plug-to-plug connections. **HRO Price $5.99**

Quick Disconnect

Model P103

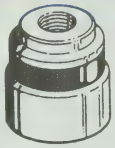
The P103 quick disconnect is spring loaded for fast antenna removal. It is constructed from chrome-plated brass with stainless steel spring and pin. Use for 3/8" x 24 antennas and mounts. **HRO Price $6.95**

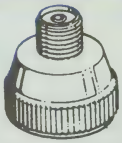
Valor pro·am™

Trunk Lip Mounting Kit
Model PAT2

This low profile, no-hole trunk mount has the Mototola Style 1-1/8"-18 thread for amateurs who demand the very best and professional quality. **HRO Price $27.95**

Adapters





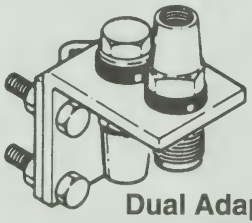
NMO to 3/8x24 Adapter
Model PAN38

NMO to SO239 Adapter
Model PANSO

Need a different mount for your mobile antenna? Use one of these adapters to convert from the mount you have to the one you need.

The **PAN38** converts an NMO to a 3/8x24 mount. **HRO Price $14.95**

The **PANSO** converts an NMO to an SO239. **HRO Price $14.95**



Dual Adapter
Model DAK

The DAK dual adapter with 1 lug and 1 SO-239 accepts 2 antennas for vertical or horizontal dipole. (Note: Antennas are sold separately.) **HRO Price $9.95**

Mirror Mount
Model SS100MOT

Stainless steel 3-way mirror mount with a Motorola style mounting. Includes 10' of cable with a PL-259 connector. **HRO Price $19.95**

Magnetic Mount
Model PAM

A series of low profile magnetic mounts for antennas with Motorola TAD and TAE 1-1/8"x18 threads.

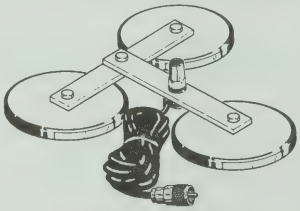
PAM is 3-3/4" with 12' RG58 to PL-259. **HRO Price $19.95**

PAM2 is 3-1/4" diameter. **HRO Price $19.95**

PAM4 is a 5" diameter mount with 17' of RG58 to a PL-259 connector. **HRO Price $24.95**

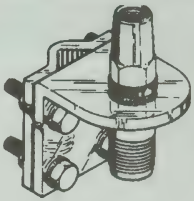
Magnetic Mount
Model 401BSO

5" diameter magnetic mount with SO-239 on top. Pre-wired with 12' RG58 to PL-259 connector. Black. **HRO Price $29.95**



Maxi-Magnet Mount
Model MM3401

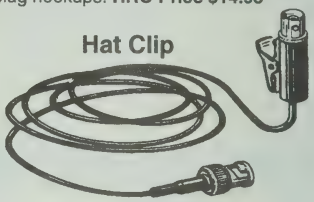
Maxi-Magnet mount kit has three 5" (401) magnets properly spaced on a heavy duty aluminum frame. The MM3401 is pre-wired to Valor's patented wafer termination with 12' of RG58 coax and PL-259 connector. Accepts standard 3/8x24 antennas. **HRO Price $39.95**



Stainless Mount
Model SSI00AD

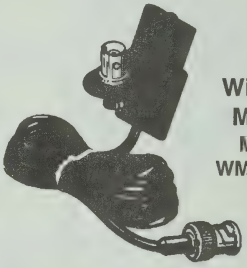
Three-way mount installs horizontally, vertically, or flush. Heavy-duty 3/8 S0-239 connector. All stainless steel hardware and chromeplated brass hex. Fits all standard 3/8-24 antennas up to 48". For plug to plug hookups. **HRO Price $14.95**

Hat Clip



Model BNC-HC

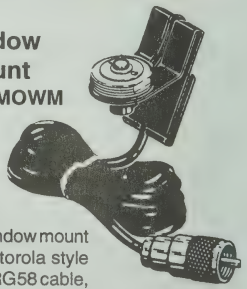
BNC Hat Clip with 4' of cable and a BNC connector. **HRO Price $14.95**



Window Mount
Model WMSLBNC

Slim Line window mount kit with BNC connectors and 7' RG188 cable. Easily mounts to any vehicle window. Features black finish window mount, BNC connectors, and high tech design. Ideal for handheld radios for amateur, CB, scanner and commercial users who need extra performance. **HRO Price $34.95**

Window Mount
Model MOWM



Popular window mount kit with Motorola style fittings. 6' RG58 cable, PL-259 connector. **HRO Price $18.95**

OUTbacker®

The Ultimate All-Band HF Mobile Antennas

< Perth & Perth Plus Antennas

HRO Prices: Perth $289.95
Perth Plus $289.95

The Perth covers 10-80 meters and the Perth Plus adds the 6 m and 2m bands. Both are sleek 3-1/2 foot stingers with a 4 foot main shaft where the taps are located. They have a tough, yet flexible fiberglass core, helically wound with copper wire hand tuned to the various "tap" frequency points. Both offer high performance with low wind drag.

Mount them easily on a trunk lip, hatch, or bumper with a standard 3/8 X 24 stud. The stinger retracts into the main shaft for easy stowage. With a proper ground plane, Perth antennas are also suitable for apartment and condo installations.

Outbacker Antenna >

HRO Price $269.95

With the Outbacker™ there is no need to change coils when changing HF bands. The antenna comes in a six foot version that handles up to 300 watts PEP and a four foot Junior model for up to 150 watts PEP.

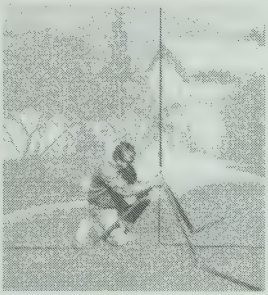
The antennas are made of fiberglass coated with smooth epoxy resin and polyurethane to provide strength, protection and durability. The pre-tuned copper helical winding has connection sockets constructed of rust-free brass and clearly marked for each band. The antenna covers all bands from 10 to 80 meters.

Mount the antenna with a standard 3/8 X 24 thread. Use Hustlers BM-1 or SSM ball mounts. An optional heavy duty spring and 2 inch base can be mounted at the bottom of the antenna and attached to a PL-259 connector.

Outreach Antenna

HRO Price $349.95

- An efficient portable antenna system for those needing limited-space, deed-restricted, backyard, patio, or field-day installations.
- All bands, 160–10 meters, including WARC.
- Only 12 ft. tall!
- Exceptional performance: 10, 12, and 15 meters are 5/8 wave; all bands are center loaded for peak performance. Compare to ANY whip you have used–you'll be AMAZED!
- Handles 150 watts P.E.P.
- Split 8 foot shaft and 4 foot stinger–antenna breaks down to 4 feet for easy portability.
- Terminates in standard 3/8 x 24 base.
- Uses Outbacker's® proven band tap system.



Alpha Delta Outpost™ Tripod / Ground Coupler Ground Mount System

HRO Price $195.95

- Designed to match the base impedance of all Outbacker® antennas.
- Fold-over 3/8 x 24 SO-239 top mount so antenna will be out of view when not in use.
- Constructed of aircraft 6061-T6 aluminum, stainless steel hardware and wing nuts — NO TOOLS REQUIRED.
- No digging–no holes in ground–no concrete.
- Fold-out legs act as a large capacitor providing proper coupling to the ground and proper base impedance to the antenna.
- Fold-up design for 10-minute installation.

Broadband Mobile HF

T. J. Antenna Co.

Broadbander BB3C All Band Mobile Antenna

NEW!

The Broadbander BB3C is an all band (10 through 80 meters) motorized antenna that will tune all bands at the flip of a switch. No more adjusting stingers or changing loading coils to switch from one band to another. The antenna is built with a motor driven center loading coil. The coil slides up and down inside a copper mast as you change frequency. The top whip may be any length but 102 inched is recommended. The antenna may be used on mobile homes, RV's and even as a fixed antenna. Top whip sold separately. **HRO Price: $299.95**

Single Band Mobile HF

Ham Sticks®

Ham Sticks® are two-piece monoband antennas consisting of a hollow fiberglass base section and a loading coil wound directly onto the fiberglass and covered with PVC shrink tubing.

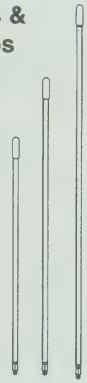
The black oxide brass base fitting has 3/8" X 24 male threads that fit most amateur mobile mounts. The top section is a tapered 17-7 PH tempered stainless steel whip that telescopes into the base section for frequency adjustment. The assembled antenna is about 7' long.

Ham Sticks

Model	Band	HRO Price
9175	75 m	$22.95
9140	40 m	$19.95
9130	30 m	$19.95
9120	20 m	$19.95
9117	17 m	$19.95
9115	15 m	$19.95
9112	12 m	$19.95
9110	10 m	$19.95
9106	6 m	$19.95

MOBILE MARK, INC.
COMMUNICATIONS ANTENNAS

Heliwhips & Kilowhips



The Heliwhip and Kilowhip Series are fiberglass-molded continuously-wound antennas for 10, 15, 20, 40 and 80 meters.

Kilo-whips are high powered versions of the Heliwhips. Power handling is 100 W for the Heli-whip and 1 kilowatt for the Kilowhip.

Mobile Mark Whips

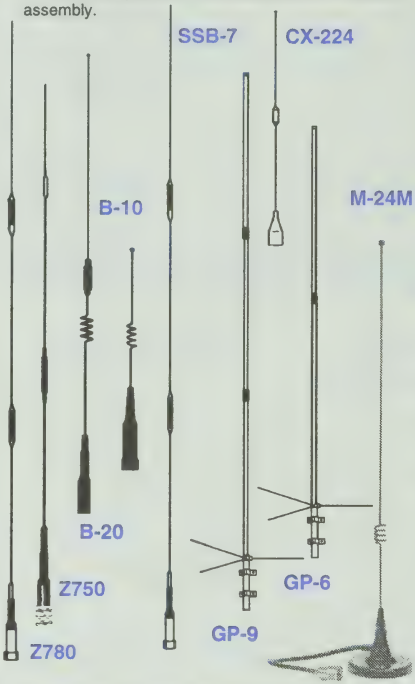
Model	Center MHz	Band-width KHz	HRO Price
HW-80	3.8	50	32.95
HW-40	7.25	100	32.95
HW-20	14.2	250	32.95
HW-15	21.2	500	29.95
HW-10	29	1000	29.95
HW-6	52	2000	29.95
KW-10	28.6	800	49.95
KW-15	21.3	400	49.95
KW-20	14.2	250	49.95
KW-40	7.22	60	49.95

COMET

Dual- & Tri-band VHF / UHF

Comet developed the Super Linear Converter (SLC) to increase actual gain of dual and triband antennas.

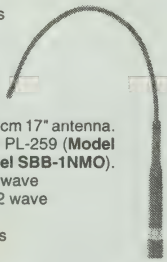
- A complete pre-formed phasing coil and phosphorus copper element eliminates additional components and gain loss.
- The SLC is electrically very efficient, providing a low angle of radiation, directly to the horizon.
- Comet sectional antennas use ABS (Transparent to RF) connecting joints for the finest pattern and easiest assembly.



Dual-Band Mag Mount Antenna

Economical black anodized 2m / 440 MHz antenna is 19.5" tall and comes with 13 feet of RG-58/U coax and either a gold-plated PL-259 (**Model M-24M**) or BNC connector (**Model M-24B**) soldered on.

Gain: 146 MHz 1.7 dBi 3/8 wave
446 MHz 4.1 dBi 1/4 + 5/8 wave
Max Power: 80 Watts
VSWR: 1.5:1 or less
Impedance: 50 Ohm
HRO Price **$39.95**



Flexible Dual-Band

Convenient, very flexible 2m / 70 cm 17" antenna. Comes with either a gold-plated PL-259 (**Model SBB-1**) or NMO connector (**Model SBB-1NMO**).

Gain: 146 MHz 1.5 dBi 1/4 wave
446 MHz 2.15 dBi 1/2 wave
Max Power: 60 Watts
VSWR: 1.5:1 or less
HRO Price **$39.95**

Comet Dual-Band Antennas

MODEL	BANDS	GAIN	MAX PWR Watts	CONN	WGT Lbs' oz"	LEN FT' In"	MAX WIND SPEED MPH	HRO Price
Dual Band Base Station Repeater Antennas								
GPX-2010	2m/70cm	9.5/13.2	200	SO-239	7'14"	23'4"	65 w/o guys 90 w/guys	$379.95
GP-9/GP-9N	2m/70cm	8.5/11.9	200	SO/N	5'11"	17'8"	90	$209.95
GP-6	2m/70cm	6.5/9.0	200	SO-239	3'8"	10'5"	90	$149.95
GP-3	2m/70cm	4.5/7.2	200	SO-239	2'12"	5'11"	112	$99.95
CA-1243Z	70cm/23cm	9.4/12.8	150/50	N-Female	3'8"	7'5"	90	$149.95
CA-1243E	70cm/23cm	6.0/8.4	150/50	N-Female	1'13"	3'4"	112	$94.95
Dual Band Mobile Antennas - All Black Anodized								
SBB-7/SBB-7NMO	2m/70cm	4.5/7.0	70	PL/NMO	–	4'7"	–	$89.95
SBB-5/SBB-5NMO	2m/70cm	3.0/5.5	120	PL/NMO	–	3'2"	–	$62.95
SBB-2/SBB-2NMO	2m/70cm	2.15/3.8	100	PL/NMO	–	20"	–	$39.95
B-10	2m/70cm	–/2.15	50	PL-259	–	12"	–	$39.95
B10NMO								$39.95
B-20	2m/70cm	2.15/5.0	50	PL-259	–	30"	–	$56.95
B20NMO								$56.95
SB-214W	2m/220MHz	1.7/3.4	100	PL-259	–	2'11"	–	$62.95
CHL-350	10m/6m	–/2.15	200	PL-259	–	7'0"	–	$79.95
NEW Z Series With Theft-Resistant Lock								
Z750	2m/70cm	2.15/5.5	200	PL-259	–	3'3"	–	$62.95
Z780	2m/70cm	4.5/7.2	150	PL-259	–	5'2"	–	$82.95

Comet Tri-Band Antennas

MODEL	BANDS	GAIN	MAX PWR Watts	CONN	WGT Lbs' oz"	LEN FT' In"	MAX WIND SPEED MPH	HRO Price
TrBand Base Station Repeater Antennas								
GP-15	6m/2m/70cm	3/6.2/8.6	200	SO-239	2'15"	7'11"	90	$159.95
GP-93	2m/70cm/23cm	4.5/7.2/10	200	N-Female	2'8"	5'7"	112	$139.95
GP-98	2m/70cm/23cm	6.5/9.0/13.5	100	N-Female	3'6"	9'4"	90+	$209.95
CX-333	2m/220/70cm	6.5/7.8/9.0	120	SO-239	3'10"	10'2"	112	$189.95
TriBand Mobile Antennas								
SB-15	6m/2m/70cm	2.15/4.5/7.2	120	PL-259	–	4'10"	–	$99.95
SB-97	2m/70cm/23cm	3.0/6.8/9.6	100	N-Male	–	3'3"	–	$79.95
SSB-224	2m/220/70cm	2.15/3.2/5.5	150	PL-259	–	3'1"	–	$79.95
SSB-224NMO	2m/220/70cm	2.15/3.2/5.5	150	NMO	–	3'1"	–	$79.95
CA-HV	40/(20)/15/10/6 /2m	HF 0 dBi 2m 3.4 dBi	120 SSB HF 100W FM 6/2m	PL-259	MAX 1'3"	MAX 6'3"	–	$134.95
L-14	Opt 20M coil for CA-HV						–	$36.95
L-18	Opt 17M coil for CA-HV						–	$29.95
HA-4S	40/(20)/15/10m	0 dBi	120 SSB 7-24MHz 200W SSB 14MHz	PL-259 /NMO		4'4"	–	$179.95
L-14HS	Opt 20M coil for HA-4S						–	$39.95
L-18HS	Opt 17M coil for HA-4S						–	$39.95

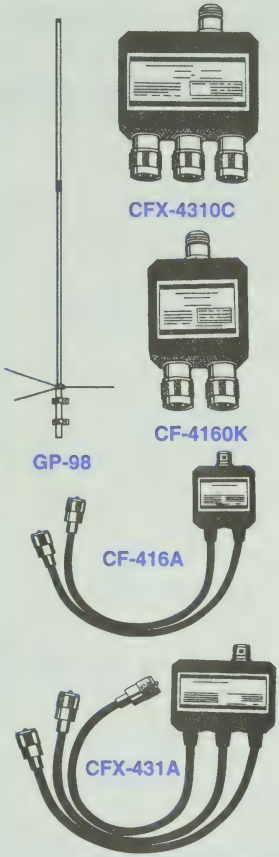
Comet Single Band and HT Antennas

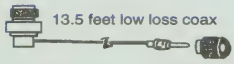
MODEL	BANDS	GAIN	MAX PWR Watts	CONN	LEN FT'In"	HRO Price
Single Band Antennas						
SBB-25/SBB-25NMO	2m	4.1	100	PL-259/NMO	4'8"	$49.95
SB-44	70cm	5.5	130	PL-259	37"	$44.95
HT Antennas						
CH-32 MINI Ant	2m/70cm	–	10	BNC	1.75"	$33.95
SMA-501 MINI Ant	2m/70cm	–	10	SMA	1.5"	$29.95
SMA-3	2m/70/23cm	1.2/1.7/3.4		SMA	9.75"	$41.95
SMA-503	2m/70cm	–	10	SMA	8.5"	$33.95
CH-75	2m/70cm	–/3.2	50	BNC	15"	$25.95
SH-95	2m/70/23cm	1.5/2/5.5	10	BNC	15"	$49.95

Comet High-Power Duplexers and Triplexers

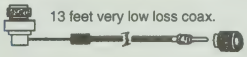
Zinc-alloy, die-cast, twin cavity, low input loss, high-isolation, and high-power. Modernize your station with Comet high-performance antenna products.

MODEL	PORT	Freq MHz	CW Watts	PEP Watts	Loss dB	Isol dB	Mix Conn	Port Conn	HRO Price
CF-416A (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	SO-239	PL-259 w/leads PL-259 w/leads	$54.95
CF-416C (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	N-Female	PL-259 w/leads N-Male w/leads	$54.95
CF-4160I (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.1 0.2	60 60	SO-239	PL-259 w/o leads N-Male w/o leads	$52.95
CF-4160K (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.1 0.2	60 60	SO-239	PL-259 w/o leads PL-259 w/o leads	$52.95
CF-413B (70cm/1.2GHz)	LPF HPF	1.3-150MHz 350-500MHz 840-1.4GHz	450 300 100	800 500 200	0.25 0.25 0.4	55 55 55	N-Female	PL-259 w/leads N-Male w/leads	$74.95
CF-530 (6M/125-470)	LPF HPF	1.3-90MHz 125-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	$74.95
CF-360A (10m/6m)	LPF HPF	1.3-30MHz 50-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	$69.95
CF-142 (2m/220MHz)	LPF HPF	1.3-1150MHz 200-480MHz	300 200	600 400	0.2 0.3	40 50	SO-239	PL-259 w/leads PL-259 w/leads	$79.95
CF-706 (2m/6m)	LPF HPF	1.3-56 MHz 75-320 MHz	350 350	600 600	0.4 0.4	40 40	SO-239	PL-259 w/cable PL 259 w/cable	$74.95
CFX-431A (2m/70cm/1.2)	LPF BPF HPF	1.6-60MHz 100-150MHz 350-500MHz 840-1.4GHz	600 450 300 100	1KW 800 500 200	0.2 0.2 0.3 0.4	50 50 50 50	N-Female	PL-259 w/leads N-Male w/leads N-Male w/leads	$89.95
CFX-4310B (2m/70cm/1.2)	LPF BPF HPF	1.6-60MHz 100-150MHz 350-500MHz 840-1.4GHz	600 450 300 100	1KW 800 500 200	0.15 0.25 0.25 0.3	50 50 50 50	N-Female	PL-259 w/leads N-Male w/leads N-Male w/leads	$84.95
CFX-4310C (2m/70cm/1.2)	LPF BPF HPF	1.6-60MHz 100-150MHz 350-500MHz 840-1.4GHz	600 450 300 100	1KW 800 500 200	0.15 0.25 0.25 0.3	50 50 50 50	N-Female	PL-259 w/leads N-Male w/leads N-Male w/leads	$84.95
CFX-514 (6m/2m/70cm)	LPF BPF HPF	1.3-90MHz 130-200MHz 380-500MHz	450 450 300	800 800 500	0.2 0.25 0.3	55 55 55	SO-239	PL-259 w/leads PL-259 w/leads PL-259 w/leads	$84.95
CFX-514J (6m/2m/70cm)	LPF BPF HPF	1.3-90MHz 130-200MHz 380-500MHz	450 450 300	800 800 500	0.15 0.2 0.25	55 55 55	SO-239	SO-239 w/o leads SO-239 w/o leads SO-239 w/o leads	$79.95
CFX-324A (2m/220/70cm)	LPF BPF HPF	1.3-150MHz 200-320MHz 390-500MHz	350 350 350	600 600 600	0.2 0.25 0.3	40 40 40	SO-239	PL-259 w/leads PL-259 w/leads PL-259 w/leads	$88.95
CFX-324B (2m/220/70cm)	LPF BPF HPF	1.3-150MHz 200-320MHz 390-500MHz	350 350 350	600 600 600	0.2 0.25 0.3	40 40 40	SO-239	PL-259 w/o leads PL-259 w/o leads PL-259 w/o leads	$85.95





RG-188 provides easy entry into the vehicle from an exterior mount.



Comet Mobile Mounting Systems

Comet has a wide variety of mobile moounts. Choose the mount and coax cable assembly that best fits your personal needs. All Comet cables have detachable connectors.

MODEL	DESCRIPTION	HRO Price
3D4M	Standard coax assy. 13ft low loss (3.5mm) coax w/UHF Connectors	$24.95
3D4N	-Ditto- But with N-Type Connectors	$28.95
CK-3M5	17ft high quality cable inc 12" RG-188 to avoid water leak/cable damage. UHF Conn.	$39.95
CK-5N	-Ditto- But with N-Type Connectors	$47.95
5D4N	13ft VERY low loss (5mm) cable assy. For 1.2GHz. N-Type Connectors	$34.95
The following Mounts are w/o Coax. Choose from the Cable Assembly Above.		
RS-500	Heavy Duty Gutter Mount	$29.95
RS-520	Small/Heavy Duty Trunk/Hatch Mount	$29.95
RS-21	Multi-Purpose Mount, Trunk-Lip/Hatch-Back, Black, Adj to any position	$34.95
RS-9	Trunk-Lip Mount, Black. For small antennas. (B-10, B-20, CHL-23J, etc)	$14.95
CM-5M	Standard Hvy-Duty Mag Mt w/RG-58A/U, Coax, UHF Conn, Max Antenna Height 4ft	$39.95
MS-5LXNN	-Ditto- But with N-Type Connectors	$61.95
GR-5M	Deluxe trunk-lip mount w/CK-3M5 Cable, UHF connectors	$67.95
GR-5N	Deluxe trunk-lip mount w/CK-5N Cable, N-Type connectors	$69.95

Free UPS Brown Shipping on Most Orders Over $100.

VHF / UHF MOBILE ANTENNAS

On-Glass Antennas

antenna specialists

AP-143

This unique on-glass styling with a coil looks like a cellular antenna. Broad banded. No tuning necessary. The length of the whip is only 26 inches. Black coating on the antenna is very attractive. No ground plane required.

MOBILE MARK, INC. COMMUNICATIONS ANTENNAS

On Window Dual Band

This On Window dual band antenna can operate anywhere within the 140-174 and 440-470 MHz bands. Tune UHF or VHF without affecting the tuning of the other band. It provides unity gain. **HRO Price $89.95**

Specifications

Frequency	140-174 MHz and 440-470 MHz
Maximum Power	150 Watts
Bandwidth	10 MHz VHF 20 MHz UHF
Radiator Length	24 inches (61 cm)
Cable	RG58U, 15.5 feet

Larsen

Larsen's full selection of on-glass antennas for single-band and dual band use are described on page 105. All single band antennas are precut, single 1/2 wave design providing 2.4 dB gain.

Single Band 1/2-Wave

Model	Description	HRO Price
KG-144-PL	2 meter antenna	$58.85
KG-220-PL	220 MHz antenna	$58.85
KG-440-PL	440 MHz antenna	$49.15

Duplexers

When using a single antenna with mobile radios that have separate 2 meter and 440 MHz outputs, you must use a duplexer.

Larsen's AD-2/70 duplexer provides a bi-directional passive coupler. VHF/UHF isolation is more than 50 dB. Handles 200 watts. **HRO Price $63.70**

Yaesu's AD-3 handles up to 50 W. Its short cables attach to VHF radios with an SO-239 and to UHF with a type N connector. VHF to UHF isolation is 50 dB. **HRO Price $52.95**

Comet Antenna produces a wide variety of duplexers / triplexers that feature gold-plated connectors, high isolation and the highest power handling abilities. See page 93.

Diamond has a wide collection of duplexers and triplexers for coupling antennas and transceivers. See page 99.

Maldol

Maldol produces high performance antennas for HF, VHF and UHF applications. There are antennas for the handheld, mobile operation and the base station. A complete line of mounts are available as well as roof mount towers. Contact your HRO representative for a description and price of your chosen Maldol antenna. Several are described here.

Handheld Antennas

Model	Freq MHz	Lgth In.	HRO Price
HS-2RB	146	4.4	$19.95
HS-70RB	440	4.4	$16.95
AH-209S	146/440	3	$19.95
HS-702S	146/440	17.6	$14.95
AH-210R	146/440	Telesc	$49.95

Base Station Series

Model	Freq	Lgth Ft.	Pwr Watts	HRO Price
HS-WX-1	4.5/7.2	6	200	$99.95
HS-WX2	6.0/8.0	9	200	$149.95
HS-WX5B	8.4/11.8	23	250	$269.95

ARTseries

The Art Series are 2m / 70 cm dual band high performance mobile whip antennas. These use the "V-Match" system to ensure full power radiation. A 24K plate center pin reduces loss. The pop-out adapter lets the antenna tilt to avoid damage in low height situations.

Dual-Band Mobiles

Model	Gain dB	Lgth In.	Pwr Watts	HRO Price
ARD-5B	-/3.8	19.6	120	$59.95
ARD-6	2.6/4.9	26.8	100	$70.95
ARD-10B	3.0/5.5	34.8	120	$74.95
ARD-18B	5.0/7.7	65.6	150	$99.95

2m / 70 cm Dual-Band Antennas

There are more dual-band antennas on the following pages:

DIAMOND ANTENNAS See Page 98 · PREMIER communications See Page 95 · COMET See Page 92 · pro·am See Page 88

Brand	Model	Type	Frequency MHz	Gain	Weight oz.	HRO Price
Icom	AH-32	2m	144-148	2.7 dB	8.8	$66.95
		70cm 5/8 collinear	440-450	5.5 dB		
Kenwood	MA-700	2m 1/2 whip	144-148	3.0 dB	7	$99.95
		70cm 5/8 stacked	440-450	5.5 dB		
Larsen	NMO 2/70	2m	144-148	2.6 dB	3.9	$53.95
		70cm 5/8 collinear	440-450	5.5 dB		
Austin	500C	2 m	144 -148	Unity	6	$32.95
		70 cm	440 - 450			
	Metropolitan	2 m	144 -148			$39.95
		220 MHz	220 - 225	Unity	6	
		70 cm	440 -450			
Valor	GM270	2m	144 -148	2.6 dB	–	$29.95
		70 cm	440 - 450	4.0 dB		
	MM270B	2m	144 -148	–	–	$39.95
		70 cm	440 - 450	–		
	PM144-440	2m	144 -148	–	–	$14.95
		70 cm	440 - 450	–		
	MO144-440	2m	144 -148	Unity	–	$16.95
		70 cm	435 - 450	2. dB		

Antenna Mount

Tenna Hitch

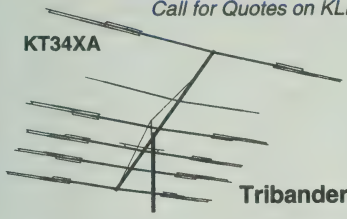
Where can you mount your antenna on a car with no bumpers? Where can you mount your HF antennas without punching holes? Do you want to pull a trailer and ham at the same time? **Here is the solution.** The Tenna Hitch mounts under the ball of your trailer hitch so you can use your regular antenna for HF operation while still pulling a trailer. Tenna Hitch supports all current HF mobile antennas. It comes with all the hardware necessary for mounting on a trailer hitch. **HRO Price $35.95**

HF ANTENNAS

HANDHELD ANTENNAS

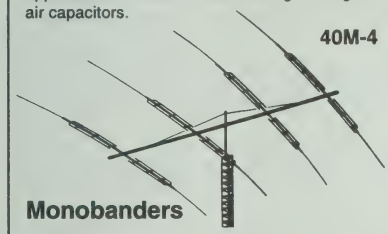
KLM

Call for Quotes on KLM



Tribanders

The KT-34A and KT-34XA are pacesetters for triband performance. The four element KT-34A offers an unusually compact solution for a three-band high performance installation. The six element KT-34XA outperforms all other commercially available tribanders. The performance of these antennas comes from the application of lossless linear loading and high-Q air capacitors.

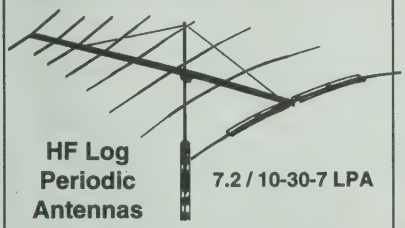


Monobanders

"World Class Extra" antennas are designed to satisfy the serious DX operator. The **80M-3, 40M-4** and the 20m, 15m and 10m 6-element monobanders offer the ultimate performance with no compromises. They are designed to achieve maximum gain, bandwidth and front-to-back ratios. All World Class Extra antennas use nonresonant Phillystran cable for element and boom-support.

160m Vertical

160V is center load for 160m. Use with ground or radials. A compact solution to your 160m needs.



Log periodics offer extended coverage of the amateur bands. The 10-30-7 LPA covers 20, 15, & 10m plus the WARC bands. The addition of a 40M-1 dipole provides 40m as well and the antenna is the 7.2 / 10-30-7 LPA. For continuous coverage from 6-30 MHz use the 6-30-15 LPA. The 12-8 LPA covers 6-12 MHz.

Rubber Duckies

Larsen

Larsen's line of KulDuckie durable portable antennas are backed with their 3-Year No-Nonsense Warranty. **Call for HRO prices.**

HELICAL (VHF, UHF) **HQ (VHF)** **DUAL BAND**

KulDuckies have outstanding transmit range with 1.5:1 VSWR. Made of copper and brass radiators, they are scope tuned to precise frequencies. Constructed with soldered connections, plastisol dip process, injection molded housings, and silver-plated contacts.

Helical

Helical antennas are approximately 8" in length for VHF and 3" for UHF.

HQ Helical

The HQ helical quarter wave antenna offers a higher gain than the regular helical. For VHF only. Length 9-1/2".

Dual Band

Two models cover 2m and 70 cm. Approximate length 8". Model KD3-2/70 has a TNC male connector; Model KD4-2/70 has a BNC male connector.

HW Half Wave

The 1/2-wave allows operation independently of a ground plane. Coils cannot flex and change frequency. HWs have a rigid impedance transformer at the base and a chrome-plated telescoping, black whip with a BNC connector. UHF model length 16-1/2"; VHF model is 11" collapsed and 44-1/2" fully extended.

HW (VHF) **HW (UHF)**

Handheld and Mobile

PREMIER communications

VHF / UHF Dualband Antennas

Premier's PNC-2 and PNC-4 dual-band mobile antennas feature the new two-way base fitting that mates directly with a regular UHF (SO-239) or NMO (Motorola-type) mount. The PNC-4 also has a fold-over feature.

Premier Antennas

Model	Description	HRO Price
PNC-2	Dual-band mobile, PNC mount, 3.5 dB, 140-165 MHz, 390-480 MHz	$43.95
PNC-4	Dual-band mobile, PNC mount, fold-over feature, 3.5 dB, 144-148 MHz, 440-450 MHz	$43.95
RD-8	Dual-band handheld antenna, 6.5" long, flexible, gold plated BNC connector	$17.95
RD-78	Dual-band handheld antenna, 15" long, 2.15 dB / 3.2 dB gain, flexible, gold plated BNC connector	$22.95
RD-98	17" long, 1/16" diameter dual-band handheld antenna	$24.95
AL-800	Dual-band telescoping antenna, telescopes to 34", collapses to 10." Whip replaceable with 9" "rat tail" (included), 3.2/5.5 dB gain	$34.95

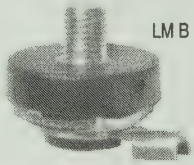
Larsen

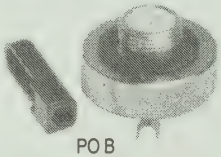
Choosing Your Larsen Mobile Antenna

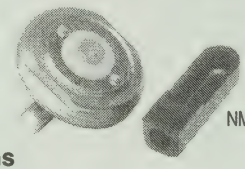
Choose your antenna configuration based on the frequency, base type (e.g., magnetic mount) and thread type (e.g., NMO). Keep in mind that it is necessary to select a base with the same mounting style as the antenna. Typical bases and styles are shown below.

Thread Types

These are examples of each of the thread types. Select one and then select the base.

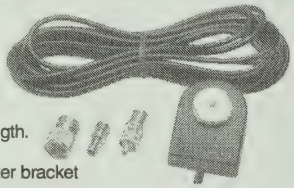




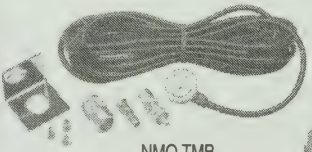


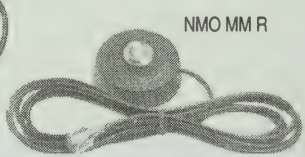
Mount Configurations

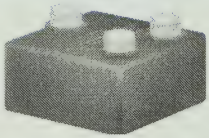
In addition to the popular Motorola 3/4" (NMO) mounts shown here, mobile antennas for the Larsen mount (LM) and PO mount (PO) are excellent choices for amateur use. Each of these mounts comes in one of the thread types.



Mounts:
NMO K premium quality rooftop.
NMO MM mag mount, 90# pull strength.
NMO TLP heavy duty trunk lid.
NMO TMB electropolished trunk gutter bracket



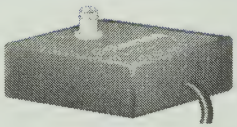




Duplexer

AD 2 / 70 VHF / UHF Duplexer

Useable Bandwidth: .. VHF 120-230 MHz
..... UHF 320-500 MHz
Crossover Frequency: ..... 283 MHz
Suppression: .... VHF @ 450 MHz 50 dB
..... UHF @ 150 MHz 60 dB
Impedance: .... 50 Ohm nominal all ports
Power: ..... 100 Watts
Insertion Loss: ..... 0.3 dB
Connectors: ..... SO-239 all ports



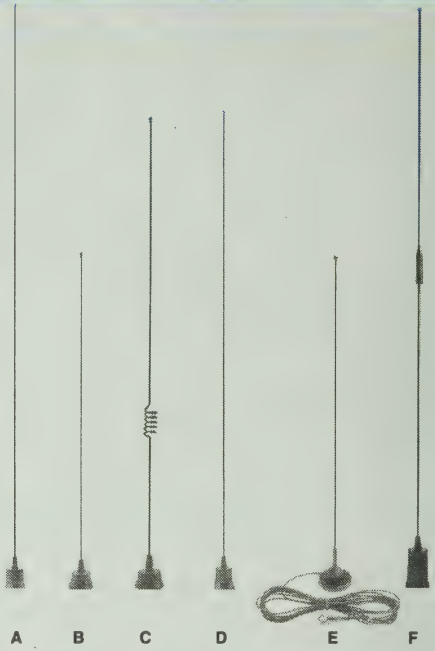
Magnetic Mount

BNC MM BNC

Connectors: BNC on the mag and coax. Coax: RG 58 A/U, 12'

Rubber Ducks On Page 95

NMO Series Antennas



Once the base and thread type are selected, the final step is to choose the antenna. Gain antennas are made of a coil and a whip. Quarter wave antennas are just a whip. All Larsen mobile antennas meet the industry's most demanding specs for electrical efficiency and mechanical durability.

- VSWR at 1.5 to 1 or less.
- Colors: Black coil base; chrome or all black whip.
- 3-year No-Nonsense Warranty.™
- Made in USA

(A) NMO 150 B (2m)

Frequency: .... 144-174 MHz
Gain: ..... 3 dB
Electrical: ..... 5/8 Wave
Height: ..... 49"

(B) NMOQ C

Frequency: .... 144-448 MHz
Gain: ..... Unity
Electrical: ..... 1/4 Wave
Height: ..... 22" max.

(C) NMO 440 B (70cm)

Frequency: .... 440-460 MHz
Gain: ..... 3 dB
Electrical: ..... 5/8 over 1/4
Height: ..... 30"

(D) NMO 220 B (1.25m)

Frequency: .... 220-225 MHz
Gain: ..... 3 dB
Electrical: ..... 5/8 Wave
Height: ..... 32"

(E) MS 144 FME

Frequency: .... 144-148 MHz
Gain: ..... Unity
Power: ..... 35 watts
Electrical: ..... 1/4 Wave
Base: ..... 2" Mini Mag
Height: ..... 22"
Coax: ..... 12' RG 174
Connector: .. FME Universal (Adapters available in BNC, PL, MPL, SPIN SMA, TNC)
Also available in MS220 FME, MS440 FME.

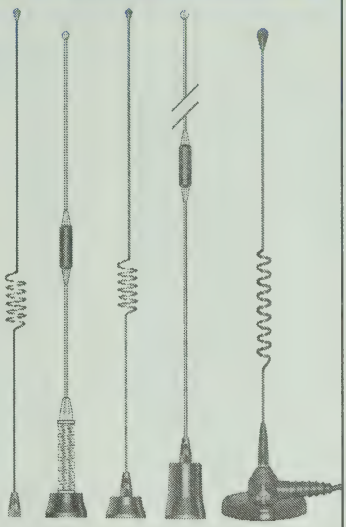
(F) NMO 2 / 70

Frequency: 144-148MHz
..... 442-448 MHz
Gain: 4 dB VHF; 2.4 dB UHF
Electrical: ..... 5/8 wave VHF
..... Collinear UHF
Height: 2m / 70cm Dual band

Dual-Band Antennas

Larsen dual band antennas provide excellent performance on 2m and 70 cm. Each antenna is factory preset to guarantee optimal performance with no tuning required.

- Range of dual band configurations are available.
- Kulrod copper-plated 17-7 stainless steel rods for greater transmit range.
- Soldered contacts.
- Premium materials and construction provide superior electrical performance and mechanical durability.
- VSWR 1.5:1 or less.
- 3-year No Nonsense Warranty.



G LMC 2 / 70 B
Frequency: 144-148/440-450 MHz
Gain: ..... Unity
Power: ..... 100 Watts
Type: VHF: Center load 1/4 wave
..... U HF: Center load 3/4 wave
Base: ..... Q CONE LMC B
Height: ..... 18"

H NMO 2 / 70 SH
Frequency: 144-148/440-450 MHz
Gain: ..... Unity
Power: ..... 100 Watts
Type: VHF: Center load 1/4 wave
..... UHF: Center load 3/4 wave
Base: NMO UHF base B w/spring
Height: ..... 17"
Whip: ..... W NMO 2/70 SH

I NMOQ 2 / 70 B
Frequency: 144-148/440-450 MHz
Gain: ..... Unity
Power: ..... 100 Watts
Type: V ..... VHF: Center load 1/4 wave
..... UHF: Center load 3/4 wave
Base: ..... NMO UHF base B
Height: ..... 18"
Whip: ..... W NMOQ 2/70 B

J NMO 2 / 70 C
Frequency: 144-148/440-450 MHz
Gain: ..... 2.4/4 dB
Power: ..... 100 Watts
Type: ..... 5/8 Wave; Collinear
Base: ..... NMO 2/70 BCO
Whip: ..... W 2/70
Height: ..... 36 3/4"

J NMO 2 / 70 B
Frequency: 144-148/440-450 MHz
Gain: ..... 2.4/4 dB
Power : ..... 100 Watts
Type: ..... 5/8 Wave; Collinear
Base: ..... NMO 2/70 BCO
Whip: ..... W 2/70 B Open coil
Height: ..... 33 1/2"

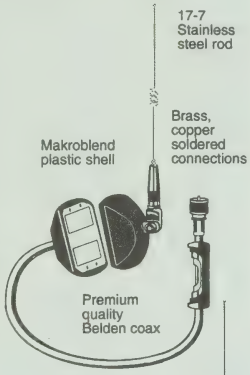
K MM 2 / 70 PL
Frequency: 144-148/440-450 MHz
Gain: ..... Unity
Power: ..... 100 watts
Coax: RG58 A/U Dual Shield, 12'
Pull strength: ..... 54 lbs.
Type: VHF: Center load 1/4 wave
..... UHF: Center load 3/4 wave
Base: ..... 3" round magnet mount
Connector: ..... PL 259 installed
Weight: ..... 1 lb.
Height: ..... 17"

Call Toll-Free for Quotes on Larsen Antenna

On-Glass Antennas

Larsen's advanced design techniques in glass-mount antennas result in superior transmit range plus tremendous mechanical durability. Glass mount performance is nearly identical to rooftop mounts, with no holes to drill. Properly installed on-glass antennas grip for years under demanding conditions, yet are easy to remove and remount..

- Patented low-impedance design is electrically efficient.
- Single-band antennas are precut, 1/2 wave design.
- Transformer outside vehicle.
- Copper plated whips.
- Rated 50 watts output.
- VSWR at 1.5 to 1 or less.
- Less than .5 dB loss through glass vs. rooftop.
- New circuit board technology locks in solid state performance.
- 3M's best on-glass adhesive grip.
- Made in USA with 3 year No-Nonsense Warranty™



Dual-Band

The KG 2 / 70 is a VHF half-wave and a UHF collinear. It comes with 14 feet of RG-58/U coax. The antenna installs easily on any flat surface. Remove the whip without tools for car washes or low garages. **HRO Price $84.95**

L KG 2/70 UD (Dual)
Frequency: 144-148/442-448 MHz
Gain: ..... 2.4/4.5 dB*
Power: ..... 50 Watts
Height: ..... 32 3/4"
Type: ..... 1/2 Wave / Collinear
*Ground plane required for gain.

M KG 2/70 PL (Dual)
Frequency: 144-148/442-448 MHz
Gain: ..... 2.4 dB VHF; 4.5 UHF
Power: ..... 50 Watts
Type: ..... 1/2 wave / Collinear
Connector: ..... PL 259 (loose)
Height: ..... 32-3/4"

Single Band

N KG 220 PL (1.25m)
Band: ..... 220-224 MHz
Gain: ..... 2.4 dB
Type: ..... 1/2 wave
Connector: ..... PL 259 (loose)
Height: ..... 24"

O KG 440 PL (70cm)
Band: ..... 440-460 MHz
Gain: ..... 2.4 dB
Type: ..... 1/2 Wave
Connector: ..... PL 259 (loose)
Height: ..... 11-3/4"

P KG 144 PL (2m)
Frequency: ..... 144-160 MHz
Gain: ..... 2.4 dB
Type: ..... 1/2 Wave
Connector: ..... PL 259 (loose)
Height: ..... 45"

DIAMOND ANTENNA

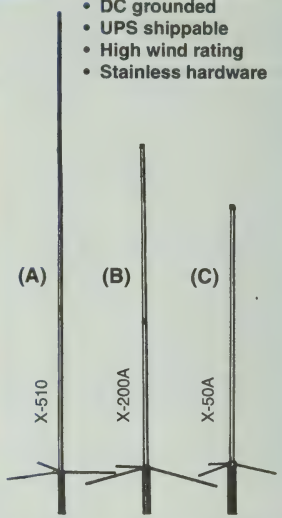
The Standard by Which All Others are Judged

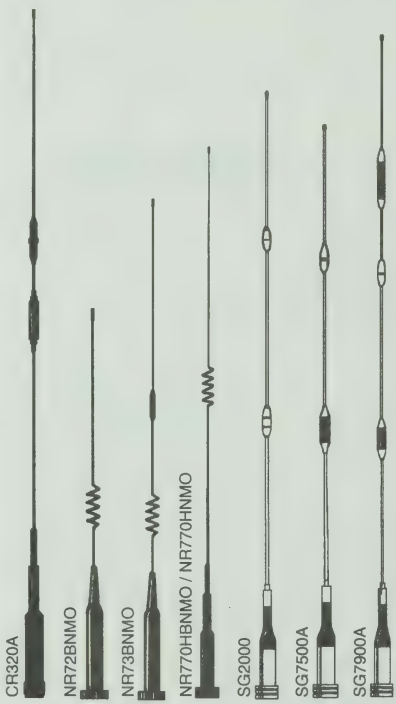
- Wide-band performance
- Highest gain
- Fiberglass radome
- Factory adjusted
- DC grounded
- UPS shippable
- High wind rating
- Stainless hardware

Diamond Base Station Antennas

Model	Bands	Gain, dB	Watts	Conn.	WT (lbs)	Lth (ft)	MPH	Flg	HRO Price
DP-GH62	6m	6	200	UHF	7	21	78	B	$139.95
F-22A	2 m	6.7	200	UHF	5	10.5	112	B	$99.95
F-23A	2 m	7.8	200	UHF	8	15	90	A	$129.95
F-142A	1 1/4 m	5.5	200	UHF	2	6	110	C	$119.95
F-718A*	70 cm	11.5	250	N	5	15	90	A	$199.95
F-1230A	23 cm	13.5	100	N	5	10.5	90	B	$159.95
U200A	70 cm/23 cm	8.3/11.7	200	N	3	6	135	C	$129.95
U5000	2m/70/23cm	4.5/8.3/11.7	150	N	3	6	135	C	$129.95
V2000A	6m/2m/70cm	2.1/6.2/8.4	150	UHF	4	8.3	110	B	$149.95
X-50A	2 m/70 cm	4.5/7.2	200	UHF	3	5.6	135	C	$99.95
X-50NA	2 m/70 cm	4.5/7.2	200	N	3	5.6	135	C	$109.95
X-200A	2 m/70 cm	6.0/8.0	200	UHF	4	8.3	112	B	$139.95
X-300A	2 m/70 cm	6.5/9.0	200	UHF	4	10.5	90	B	$159.95
X-510NA	2 m/70 cm	8.3/11.7	200	N	5	17.2	90	A	$189.95
X-510MA	2 m/70 cm	8.3/11.7	200	UHF	5	17.2	90	A	$189.95
X-500HNA	2 m/70 cm	8.3/11.7	200	N	7	17.8	90+	A	$249.95
X-700HNA	2 m/70 cm	9.3/13.0	200	N	12	24	90	-	$399.95
X-2200	2 m/1 1/4 m	6.0/7.8	200	UHF	4	10.6	112	B	$169.95
X-3200A#	2m/1 1/4m/70cm	6.0/7.8/8.0	100@	UHF	4	10	112	B	$209.95
X-6000A	2m/70/23cm	6.5/9.0/10.0	100	N	5	10	112	B	$199.95

All base antennas grounded for lightning protection #2m: 146-148 MHz
Factory adjusted for American Amateur Bands - No tuning required
* F-718A -- 440-450; F718J – 430-440; F718L – 420-430
@ 100 wwatts on 2m, 200 watts on 1 1/4m and 70cm





Diamond Mobile Antennas

Model	Bands	Gain/dB	Watts	Mount	Lth/in	HRO Price
NR-124	23 cm	8.4	100	N	25	$59.95
NR-140A	1 -1/4 m	4	150	UHF	37	$53.95
SG2000 (ltd qty)	2 m	5.2	150	UHF	62	$69.95
SG-2000HD	2 m	5.2	250	UHF	62	$89.95
CR-214S*	2 m/1 -1/4 m	2.1/3.4	150	UHF	37	$58.95
CR-224A	2 m/1 -1/4 m	5.0/6.0	200	UHF	68	$99.95
CR-320A#*	2 m/1 -1/4 m/70cm	2.1/3.8/5.5	100@	UHF	36	$89.95
CR-627B#*	6m/2m/70cm	2.1/4.5/7.2	150	UHF	60	$99.95
CR-627BNMO#*	6m/2m/70cm	2.1/4.5/7.2	150	NMO	60	$99.95
NR-72BNMO#*	2 m/70 cm	2.1/2.1	100	NMO	14	$41.95
NR-73BNMO#	2 m/70 cm	2.1/5.3	100	NMO	33	$57.95
NR-770HA	2 m/70 cm	3.0/5.5	200	UHF	40	$58.95
NR-770HNMO	2 m/70 cm	3.0/5.5	200	NMO	41	$56.95
NR-770R	2 m/70 cm	3.0/5.5	200	UHF	39	$51.95
NR-770SA*	2 m/70 cm	2.1/2.1	100	UHF	17	$41.95
NR-770HB#	2 m/70 cm	3.0/5.5	200	UHF	40	$58.95
NR-770HBNMO#	2 m/70 cm	3.0/5.5	200	NMO	41	$59.95
NR-790A	2 m/70 cm	4.5/7.2	120	UHF	58	$82.95
NR-2000NA	2 m/70/23 cm	3.1/6.3/9.7	100	N	39	$89.95
SG6000NMO*	6 m	2.15	150	NMO	39	$84.95
SG7000*	2 m/70 cm	2.1/3.8	100	UHF	18	$69.95
SG7200NMO	2 m/70 cm	3.2/5.7	150	NMO	38	$86.95
SG7500	2 m/70 cm	3.5/6.0	150	UHF	41	$79.95
SG7500NMO	2 m/70 cm	3.5/6.0	150	NMO	42	$79.95
SG7900	2 m/70 cm	5.0/7.6	150	UHF	62	$109.95
SG9600	6 m/2 m/70 cm	-/2.15/5.2	60	UHF	33	$82.95

Factory adjusted for American amateur bands, no tuning required.
SG and NR antennas require no ground system.
Mobile antennas have foldover feature with spring loaded hinge (except NR770SA,NR72BNMO, NR73BNMO).
Magnetic mount not recommended for antennas over 45°.
Black Anodized finish @ 100 watts on 1-1/4m, 200 watts on 2m and 70cm.
* Magnetic Mounts not recommended. Vehicle Grouind required

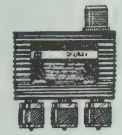
ANTENNAS & ACCESSORIES

Frequencies

Band	Frequency
6 m	50 - 54 MHz
2 m	144 - 148 MHz
1-1/4 m	222 - 225 MHz
70 cm	440 - 450 MHz
23 cm	1240 - 1300 MHz

MX324
MX-2000
MX-3000
MX-3000N

MX-37
MX-72H
MX-72N
MX-214



MX-324D
MX-2000D
MX-3000D

MX-72D
MX-214D

Diamond Duplexers and Triplexers

Model	Port	Freq MHz	CW Watts	PEP Watts	Loss dB	Isol. dB	MIX Conn.	Port Conn.	HRO Price
MX-37	LPF HPF	1.6 - 470 900 - 1300	100 50		.25 .25	45 45	N-Jack (F)	UHF-Male/12" cable N-Male/12" cable	$64.95
MX62M	LPF HPF	1.6 - 56 76 - 470		600 600	.3 .3	50 50	SO-239	PL-259/12" cable PL-259/12" cable	$74.95
MX-72D	LPF HPF	1.6-30 140-150 440-460	400 150 100	1KW 400 250	.1 .1 .2	60 60 60	SO-239	PL-259/no cable PL-259/no cable	$43.95
MX-72H	LPF HPF	1.6-30 140-150 440-460	400 150 100	1KW 400 250	.1 .1 .2	60 60 60	SO-239	PL-259/12" cable PL-259/12" cable	$46.95
MX-72N	LPF HPF	1.6-30 140-150 440-460	400 150 100	1KW 400 250	.1 .1 .1	60 60 60	SO-239	PL-25912" cable N-Male/12" cable	$49.95
MX-214	LPF HPF	140-150 220-225	150 100	400 250	.3 .4	45 45	SO-239	PL-259/12" cable PL-259/12" cable	$68.95
MX-214D	LPF HPF	140-150 220-225	150 100	400 250	.3 .4	45 45	SO-239	PL-259 no cable PL-259/no cable	$68.95
MX-324	LPF BPF HPF	1.6-60 220-225 400-550		800 600 500	.3 .4 .4	40 40 40	SO-239	PL-259/12" cable PL-259/12" cable PL-259/12" cable	$99.95
MX-324D	LPF BPF HPF	1.6-60 220-225 400-550		800 600 500	.3 .4 .4	40 40 40	SO-239	PL-259 no cable PL-259/no cable PL-259/no cable	$99.95
MX-2000	LPF BPF HPF	1.6-60 110-170 300-950		800 800 500	.15 .20 .25	60 60 60	SO-239	PL-259/12" cable PL-259/12" cable PL-259/12" cable	$84.95
MX-2000D	LPF BPF HPF	1.6-60 110-170 300-950		800 800 500	.15 .20 .25	60 60 60	SO-239	PL-259/No cable PL-259/No cable PL-259/No cable	$79.95
MX-3000	LPF BPF HPF	1.6-160 350-500 850-1300		800 400 200	.15 .25 .30	55 55 55	N-Jack(F)	PL-259/12" cable PL-259/12" cable N-male/12" cable	$79.95
MX-3000D	LPF BPF HPF	1.6-160 350-500 850-1300		800 400 200	.15 .25 .30	55 55 55	N-Jack(F)	PL-259/No cable PL-259/No cable N-male/No cable	$79.95
MX-3000N	LPF BPF HPF	1.6-160 350-500 850-1300		800 400 200	.20 .30 .40	55 55 55	N-Jack(F)	PL-259/12" cable N-Male/12" cable N-male/12" cable	$85.95

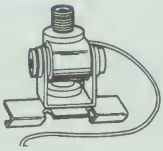
Diamond Mobile Mounts

Model	Description	HRO Price
C101	UHF base 6.5' RG316 Teflon coax w/PL259	$29.95
C101NMO	NMO base 6.5' RG316 Teflon coax w/PL259	$29.95
C110BNC	10' rg316 cable extension with BNC. For front radio installations	$22.95
C110	10' mini-8/RG8X cable extension for front radio installation	$14.95
C211	Combination of C101 and C110. 16.5 feet cable assembly	$39.95
C213	UHF base, 13.5' RG316 Teflon Coax with PL-259	$37.95
C213NMO	NMO base, 13.5' RG316 Teflon Coax with PL-259	CALL
DPK-4NM-N	Type N on Magnet. Similar to DP- SPM/5D. N-Plug. Good to 1300 MHz.	$49.95
K200KM	Black Trunk/Hatchback mount with fold over feature. 16.5 feet RG-58A/U w/PL-259	$62.95
K300C	Deluxe rain gutter mount. Black, Adjustable position. 10 feet RG316 Teflon Coax w/PL259	$39.95
K300KM	Deluxe rain gutter mount. Black, adjustable position. 16.5" RG-58A/U w/PL-259	$67.95
K400-3/8C *	Special mount for 3/8X24 thread Antenna. 6.5 feet RG316 w/PL-259	$69.95
K400C *	Deluxe mount with UHF type base. 6.5 feet RG-316 Teflon coax w/PL-259	$69.95
K400N *	Deluxe mount with type-N base. 13.5 feet RG316 Teflon coax w/type-N connector	$74.95
K400CNMO	Deluxe mount with NMO type base. 6.5 feet RG316 Teflon coax w/PL-259	$69.95
K540KM	Deluxe Mirror/Luggage rack mount. Black, adjustable. 16.5' RG58A/U w PL259	$59.95
K550KM	Deluxe mini van luggage rack mount. Black, adjustable. 16.5' RG58A/U w PL259	$69.95
K600M	Tilt angle (0-9 degrees) trunk mount. Black. RG-188 and low loss 5 mm cable.	$67.95
K601M *	UHF hideaway trunk mount. 6.5 feet RG316 Teflon coax w/PL-259	$69.95
K601NMO*	NMO hideaway trunk mount. 6.5 feet RG316 Teflon coax w/PL-259	$69.95
K9000LRM	Motorized mount for luggage rack. Use C-series cable assemblies	$99.95
K9000TM	Motorized mount for trunk lid. Use C-series cable assemblies	$99.95
NMO/UHF	Adapter for imported antennas PL-259 to Motorola NMO base. Max 45" antenna	$17.95
SPM35	UHF type base on heavy 1.5 lb/4" magnetic, 13' 5mm coax/PL-259.	$39.95

Connector Types

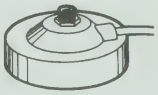
Type	Description
UHF	SO-239/PL-259
NMO	Motorola Type

K300C /
K300KM



K400C
K400CNMO
K400N
K400-3/8C

K600M



SPM35
DPK-4NM-M

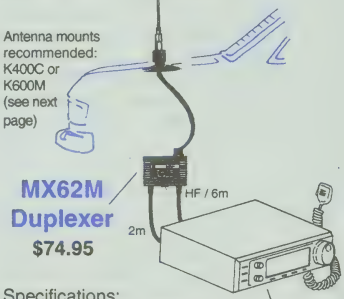
ANTENNAS & MOUNTS

DIAMOND ANTENNA

Mobile Antenna System
Model MV3A

MV3A has 4 band capability: 2m, 6m, plus two HF bands through use of loading coils.

Bands Supplied:	10m / 6m / 2m
Opt. Loading Coils:	40m/20m/17m/15m
Power, P.E.P.:	HF 120w / VHF 200w
Mount Connection:	UHF
Length:	57"
SWR:	1.5:1 nominal
MV3A Price:	**$84.95**



MX62M Duplexer
$74.95

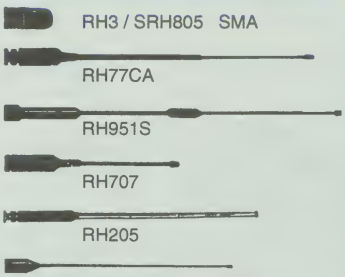
Specifications:
- HF / 6m & 2m duplexer.
- 1.6–56 MHz LPF
- 76–470 MHz HPF
- (76-120 receive only)
- Watts: 600 P.E.P.
- Loss: .2 dB LPF, .3 dB HPF
- Isolation: 50 dB

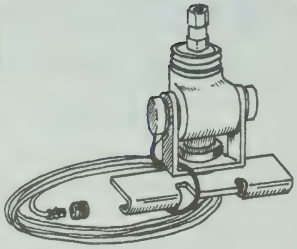
Use with HF / VHF mobile Transceivers such as the IC706, or combine 2m and HF rigs.

Optional Loading Coils

HVC7	40m	$39.95
HVC14	20m	$39.95
HVC18	17m	$39.95
HVC21	15m	$29.95

Antennas for Handhelds





K400-3/8C Special Trunk Mount
for 3/8 x 24 thread Antennas

Here's the ideal mounting system for Outbacker Perth, OB Jr., and other medium weight antennas. A spring is recommended for stiff or heavy antennas.

Power: 350 watts RMS
Cable: 6 1/2' RG316 teflon coax
Connector: PL-259
Adjustment: 2 axis

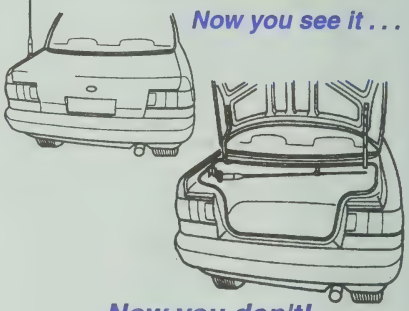
K400-3/8C $69.95
Note: Use C110, 10 ft extension for front radio installation. $14.95

Hide-Away Antenna Mount
Model K601

As easy as 1–2–3 the K601 Hide-Away Mount folds your mobile antenna safely into the car trunk. Fully adjustable, it fits most vehicles.

Color: Black.
Power Rating: 350 W RMS; 500 W P.E.P.
Cable: 6 1/2' RG316 teflon coax w / PL-259.
Recommended antennas: NR73BNMO, NR770HNMO, NR770HBNMO, SG7200NMO, NR770H, NR770HB, NR770RA & SG7500A.

K601M	UHF Base	$69.95
K601NMO	NMO Base	$69.95
C110, 10 ft extension		$14.95



Diamond Accessories

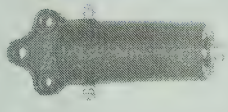
Model	Description	HRO Price
CX-210A	Heavy duty wideband coax switch, DC-1000 MHz. 1.5 kW, SO-239 connector.	$44.95
CX-210N	Heavy duty wideband coax switch, DC-1500 MHz. 1.5 kW, N connector.	$74.95
CX-310A	Heavy duty 3 position coax switch, wideband. DC-800MHz. SO-239 connectors	$83.95
DL-30A	Dummy load. DC-500 MHz, 15W RMS (max)/100w peak. PL-259 connector.	$27.95
HB-100	Desktop mounting bracket for handheld transceivers	$34.95
HB-300	Universal mounting bracket for detachable face radios	$59.95
HB-400	HT tranceiver dash mount. Clamps to air conditioning louvers	$19.95

Diamond Handheld and Receiving Antennas

Model	Description	HRO Price
D-130J	Wideband discone 25-1300 MHz. 200 W transmit 50-1300 MHz. No cable.	$89.95
RH-3	2m / 70cm dual-band HT antenna. 1.75" BNC. 120-900 MHz receive.	$24.95
RH-77CA	High gain 2m / 70cm dual-band HT antenna. Receive range to 900 MHz. BNC.	$24.95
RH-205	2m HT antenna, telescopic, 5/8 fully extended, 47.5"; 1/4 retracted, 9".	$24.95
RH-519	2m / 70cm slim dual-band HT antenna. Flexible. 8" BNC, 10 watts.	$27.95
RH-707	2m / 70cm dual-band, tiltable whip HT antenna. 8-1/4" BNC.	$33.95
RH-951S	High gain 2m/70cm/23cm slim tri-band HT antenna. Flexible. BNC (Wide band receive)	$44.95
SRH-519	2m / 70cm slim dual-band HT antenna. Flexible. 8" SMA, 10 watts.	$32.95
SRH-805	2m / 70cm / 23cm tri-band HT antenna. 1.75" SMA, 10 watts.	$27.95
SRH-815	2m / 70cm / 23cm tri-band HT antenna. Flexible. 6" SMA, 10 watts.	$36.95

Baluns

BENCHER



ZA-1A Balun

The ideal 1:1 Balun for dipoles, quads, inverted vees, and yagis from 80 - 10 meters lets your antenna radiate, not your feed line. It will accept 1/4" support rope for inverted vees. No rusting materials used. No ferrite cores to saturate and cause TVI. DC grounded for lightning protection. Included "O" ring seals coax connector. Rated 5KW peak. This tough, well-made product, will provide years of reliable service. **HRO Price $42.95**

hy-gain by Telex

BN-4000: Series 243S

These current-type baluns come in three models. BN-4000B for beams; BN-4000D for dipoles; BN-4000N with a type-N connector. Frequency 1 to 54 MHz for beams. **Call for HRO Discounts.**

BN-86: 242S

Broadband 50 ohm ferrite, voltage-type balun. Use-able from 3-30 MHz. Comes with clamp to bolt to boom and SO-239 connector.
HRO Price $36.95

CENTAUR

Centaur high performance Balun products represent state-of-the-art designs and the best material applications available to the communications industry. These baluns have stainless steel hardware, heavy duty body materials, and military grade internal components. They are well suited for adverse weather. Centaur Baluns are very conservatively rated and backed with Centaur's LIFETIME WARRANTY.

Model	Description	Price
B11W10-50	.5 to 50 MHz, dipole, 1:1,3kW SSB, Torodial material. Teflon So239A connectors, stainless steel hardware	$49.95
B11Y10	Same as B11W10 except for Yagi antennas. Supplied with stainless steel mounting bands	$49.95
B41Y10	For Yagi antennas, 4:1 match	$64.95
B41W10	4:1 balun for 4:1 ladder line to coax match. 3kW SSB rating, .5 to 50 MHz	$64.95

Antenna Rope

Synthetic Textiles

Black Dacron® Polyester

This antenna rope is constructed of strong, double braid Dacron® polester. It is black for UV protection and has excellet resistance to mildew and abrasion. The rope ties and cuts easily, sealing effectively with a hot knife. No expensive hardware is required. Sizes and prices are shown below.

Size	Model	Strength	HRO Price *
3/32"	ST-3/32-100	260+ lbs	$9.95
3/16"	ST-3/16-100	770+ lbs	$14.95
5/16"	ST-5/16-100	1790+ lbs	$19.95

* Price per 100 feet

Insulators

hy-gain by Telex

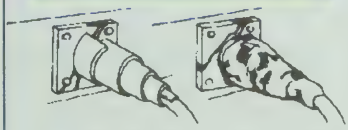
Center Insulator: Model 157S

For dipoles. Accepts 1/4" or 3/8" coax.
HRO Price $26.95

End Insulator: Model 156

For multiband dipoles. Pair of 7" heavily serrated end insulators.
HRO Price $26.95

Coax-Seal



Coax-Seal will seal all types of coax fittings, baluns, antenna parts and connectors of any shape. Adheres to most surfaces. Wrap Coax-Seal around the object you want to protect and then mold it into shape. Keeps moisture out of the coax fitting on antenna feed lines. Need to make a change? Just remove it and start over.

Coax

Belden

Call for Belden Quotes

Coax can be purchased in any length up to 1000 feet. 1000' continuous lengths of 9913 or 8214 must be sent by truck.

8214 - RG8 / U

8214 is a standard RG8 / U, #13 stranded copper center conductor, cellular polyethylene insulation, 97% bare copper shield, PVC jacket, 50 ohm impedance, 78% velocity factor and 1.8 dB loss per 100' at 100 MHz. The most popular cable for HF and VHF / UHF. Use when long cable runs are not required.

RG213 / U

RG-213 / U coax, #13 stranded copper center conductor, solid polyethylene insulation, 97% bare copper shield, non-contaminating PVC jacket, 50 ohm impedance, 66% velocity factor and 2.2 dB loss per 100' at 100 MHz. This RG-8 type cable is best for HF use. It may be buried.

9913 / 9913F

9913 is RG8-type coax, #9.5 solid copper conductor, semi-solid polyethylene insulation, 100% foil plus 88% braid shield, PVC jacket, 50 ohm impedance, 84% velocity factor and 1.4 dB loss per 100' at 100 MHz. The best cable for VHF and UHF applications. Use **9913F** for more flexible runs.

9258 - RG8X

RG8X is small diameter coax, #16 stranded copper center conductor, cellular polyethylene insulation, 95% bare copper shield, PVC jacket, 50 ohm impedance, 78% velocity factor and 3.7 dB loss per 100' at 100 MHz. Good for short VHF runs and most HF uses.

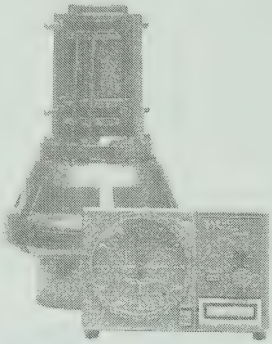
9356 - RG8 / U

100' roll of 8214 RG8 / U coax with PL-259 connectors (crimp type) installed on each end for your convenience.

8000

14 strand "copper weld" bare copper wire. Great for long wires or dipole. High tensile strength.

Yaesu's high quality rotators for amateurs include models for medium to large arrays and for satellite work. There are also provisions for computer control. Contact your nearest HRO for more specifications and discount prices on Yaesu products.



G2800SDX

The G-2800SDX is a high-technology rotator designed to turn the largest tower-mounted antenna arrays.

G-800S / G-800SDX

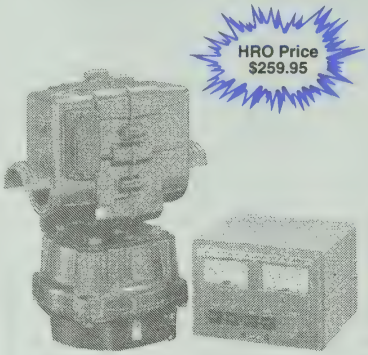
The G-800 rotator series is designed for medium to heavy loads and antennas up to 20 square feet. The G-800SDX is the same as the G-800S with the addition of presets.

G-1000SDX

The G-1000SDX is designed to handle bigger arrays, up to 22 square feet. A great value.

G-450XL

The G-450XL is ideal for smaller HF and VHF/UHF antennas. Features 360 degree radial compass display with overlap. A slight modification required for 220V operation.



G-5400B

This is the most popular azimuth and elevation rotator for satellite, moonbounce or other space communications work. It combinations the G400 and G500 rotators to provide both horizontal and vertical antenna rotation in a single unit. The control box has two large meters, one showing elevation and the other azimuth. Meter aiming accuracy is within ±4%. The G-5400B provides for full 180° elevation rotation with a rotation time of 58 seconds. A full 360° azimuth rotation can be achieved in just 50 seconds. This rotator accepts up to a 2.5" mast, a maximum 1-5/8" horizontal crossboom and 440 pounds of vertical load.
HRO Price $549.95

G-500A

This is an elevation rotator for satellite work. The control box shows elevation in degrees.

Rotator Computer Controllers

The GS-23 Rotator Computer Controller is for the G-800SDX, G-1000SDX and G-2800SDX.
HRO Price GS-23 $319.95

The GS-232 model is for the G-5400.
HRO Price GS-232 $499.95

Rotator Separation Kit

For some applications it is desirable to separate the azimuth from the elevation rotator on the tower. This separation kit provides all the hardware for the rotator to implement this separation.
HRO Price $30.95

Rotator Cable

Belden

HRO carries two **Belden rotator cables**. Use standard duty cable for runs up to 100 feet. For longer runs, please use heavy duty cable. Remember, Belden quality is **tops** in the industry

8 wire, standard duty - Model 8448 - 8 wire cable using six #22 and two #18 tinned copper conductors. PVC insulation; chrome PVC jacket.

8 wire, heavy duty - Model 9405 - 8 wire cable using 6 - #18 m and 2 - #16 tinned copper conductors. PVC insulation; chrome PVC jacket.

When Ordering Cable

Please order cable in multiples of 50 feet. Lengths up to 1000 feet in a continuous spool can be provided. **Call for quotes.**

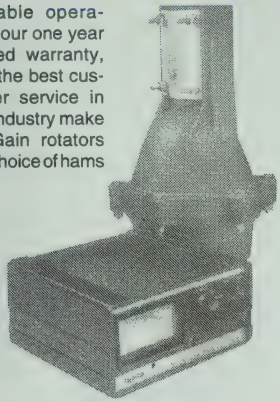
Rotator Specifications

	Model	Input Voltage	Motor Voltage	Rotation Time	Stationary Torque	Rotation Torque	Maximum Windload	Max. Vert Load	Max. Mast Size	Cable Type	Weight lbs (kg) *	HRO Price
Hy-Gain	HDR-300A	110/220 V	24 VAC	60 sec	7500 in lbs	5000 in lbs	25 sq ft	500 lbs	3 in	7-wire	55 (25)	$1,099.95
	T2X#	110 V *	24 VAC	60 sec	9000 in lbs	1000 in lbs	20 sq ft	800 lbs	2.06 in	8-wire	28 (12.7)	$529.95
	HAM-IV#	110 V *	24 VAC	60 sec	5000 in lbs	800 in lbs	15 sq ft	500 lbs	2.06 in	8-wire	24 (11)	$469.95
	HAM-V#	110 V *	24 VAC	60 sec	5000 in lbs	800 in lbs	15 sq ft	500 lbs	2.06 in	8-wire	24 (11)	$799.95
	CD-45II	110 V	24 VAC	60 sec	800 in lbs	600 in lbs	8.5 sq ft	200 lbs	2.06 in	8-wire	22 (10)	$319.95
	AR-40	110 V	24 VAC	60 sec	450 in lbs	350 in lbs	3 sq ft	100 lbs	2.06 in	5-wire	14 (6.4)	$239.95
M 2	OR-2800P	110/220 VAC	28 VAC	70 sec	17,000 in lbs	2500 in lbs	35 sq ft	1800 lbs	3 in	8-wire	28.5 (13)	$1,269.95
Yaesu	G-450XL	110 V	24 VAC	51 sec	217 ft lbs	39.8 ft lbs	10 sq ft	242 lbs	2 in	5-wire	7 (3.2)	$259.95
	G-800S	110 VAC	24 VAC	55 sec	3456 in lbs	43-79 ft lbs	17 sq ft	440 lbs	2.5 in	6-wire	10 (4.5)	$349.95
	G-800SDX	110 VAC	24 VAC	55 sec	3456 in lbs	43-79 ft lbs	17 sq ft	440 lbs	2.5 in	6-wire	10 (4.5)	$399.95
	G-1000SDX	110 VAC	24 VAC	55 sec	5200 in lbs	79 ft lbs	22 sq ft	440 lbs	2.5 in	6-wire	15 (6.8)	$499.95
	G-2800SDX	110 VAC	24 VAC	55 sec	20,832 in lbs	219 ft lbs	34 sq ft	880 lbs	2.5 in	6-wire	26(11.8)	$1,149.95
	G-500A	110 VAC	24 VAC	61 sec	1740 in lbs	876 in lbs	11 sq ft		1.5 in	6-wire	5.5 (2.5)	$279.95

* 220 VAC models are available at additional costs #Digital versions available. Call for quotes

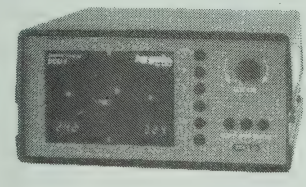
hy-gain by Telex

Reliable operation, our one year limited warranty, and the best customer service in the industry make Hy-Gain rotators the choice of hams



around the world. Every tower manufactured comes with mounting holes for the Hy-Gain bolt pattern.

The heavy duty HDR-300A has a control cable connector and a stainless steel shaft. It gives you a choice of North or South centering orientation.



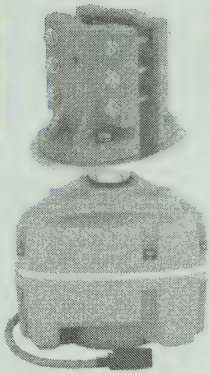
Pathfinder DCU-1 Digital Control System

Hy-Gain's DCU-1 Pathfinder is the first all-digital rotator control box made in the USA. With six heading presets, automatic break delay and computer compatibility, the DCU-1 Pathfinder establishes a new standard for rotator systems.

Digital and analog displays help you preprogram your favorite beam headings. The main ROTATE knob sets the target bearing within 1 degree. An all-in-one RS-232 computer interface unit and simple Basic program is included. Features motor slow down, automatic calibration, and programmable center of rotation. The DCU-1 may be paired with the T2X, HAMIV or HAMV.
HRO Price $579.95

M²

OR-2800P Rotator



The Orion OR-2800P is engineered for long life, reliability and performance while turning large antennas or systems. It has a strong ductile iron mast clamp to supports up to 3" masts, extended and hardened drive shaft, and prop-pitch style torque plate. The rotator housing fits inside most popular towers and mates to standard tower / rotator plates.

The RC2800P Control Box has digital readout, variable speed control, slow start, and reverse delay, programmability, preset, 2 rotator capacity, coast-down, true AZ readout-continuous and infinite limit position control.

The OR-2800P carries a 1 year warranty is made in the U.S.A. **HRO Price $1269.95**

Wind Area Capacity	35 sq. ft.
Starting Torque	3500 in. lbs.
Rotating Torque	2500 in. lbs.
Breaking Torque	17000 in. lbs.
Vertical Load Capacity	1800 lbs.
Mast Size (O.D.)	1.75-3"
Rotational Speed (360)	70-140 sec.
Readout Accuracy	1 degree
Input Voltage	110/220 AC 50/60 Hz
Motor Voltage	28 VAC
Cable Type	8 conductor
Weight (Rotator unit)	28.5 lbs.

The OWL

Want to keep those birds off your antenna system? The OWL is just the trick.

Mount this fella on top of your tower and the birds will stay away.

HRO Price $19.95

Weather Stations

NEW!

Ultimeter 800

The Ultimeter 800 has nearly all the features of the Ultimeter 2000 except the barometer function. It has wind speed, wind direction, outdoor temperature, indoor temperature, wind chill temperature, time, date, automatic leap year adjustment and automatic scan mode as standard functions. With optional sensors rain, outdoor humidity, indoor humidity and dew point reading are available. It automatically stores today's and yesterday's highs, lows and total rain fall. It also store long term highs and lows. Alarms are provided for high wind, high and low outdoor temperature, high and low indoor temperature. The serial port has three output modes.
HRO Price $239.95

Ultimeter 2000

The Ultimeter 2000 delivers more than 100 weather readings yet it is simple to use. Each key is labeled with an icon that indicates its function. Provides wind speed, barometric pressure, temperature, humidity and rain (optional) information. Gives current data as well as today's, yesterday's and long term highs and lows. I/O port for computer connectivity. **HRO Price $379.95**

Weather Picture

NEW!

The Weather Picture receives data from an Ultimeter and continuously displays all the vital data you have pre-selected. The 8 inch compass rose and big 0.8 inch illuminated red numerals are clearly visible day or night. It can be viewed even from across the room.
HRO Price $169.95 (aluminum version)

Order Toll-Free from Canada.

MA-SERIES CRANK-UP MASTS

The premier MA-Series crank-up Tubular Towers are designed to be both safe and neighbor friendly. The slender design gives a Clean, flagpole-like appearance, while allowing for antennas up to 10 sq. feet in 50 mph winds. Per EIA Specifications, adequate safety margins are included. Uniform Building Code calculations are available for most models.

The MA-40 and 550 models come standard with flat base. two 1/2" x 10" anchor bolts, wall bracket and rotor plate mounted on top of top section. No guying is required when tower is properly bracketed to the eve of your roof.

MA-Series towers are completely self-supporting only when used with accessory MARB or MAB Series bases. The MARB Series rotor base allows the entire tower and antenna to be rotated from the base (rotor not included). This provides for easy rotor maintenance plus emergency hand rotation of the entire tower and antenna.

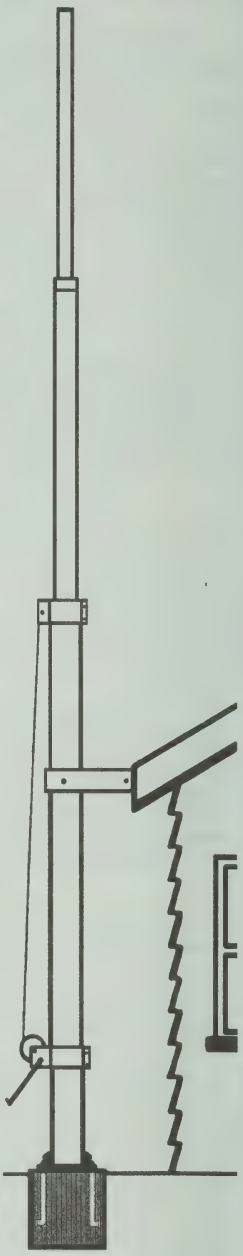
The MA-550MDP, 770MDP and 850MDP models include a heavy duty motor drive with positive pull down. The MDP models provide motorized raising and lowering of the tower. A remote control unit (RMC-1000) accessory is available that allows raising and lowering from your ham shack or other remote location.

All models without motor drives come standard with manual hand winches which have load actuated brakes for maximum safety. This feature prevents the winch from free-wheeling and causing injury to you or your installation in the event that you lose your grip during raising or lowering.

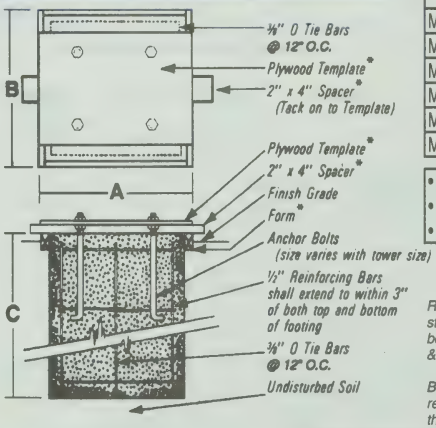
All steel used at US Tower conforms to ASTM specifications. All welding is done by certified factory personnel. All of our towers are factory tested by trained personnel before leaving the plant.

Model Number	Height Maximum	Height Minimum	Sections	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
MA-40	40'	21'6"	2	242	3" sq.	4.5"	$679.95
MA-550	55'	22'1"	3	435	3" sq.	6.625"	$1,069.95
MA-550MDP	55'	22'1"	3	620	3" sq.	6.625"	$2,899.95
MA-770	75'	22'10"	4	645	3" sq.	8.0"	$2,699.95
MA-770MDP	75'	22'10"	4	830	3" sq.	8.0"	$3,999.95
MA-850MDP	90'	23'6"	5	1128	3" sq.	10.0"	$5,399.95

All Towers will handle 10 sq. ft antenna at 50 MPH winds.



MA-SERIES BASE INFORMATION



**To be removed after base is installed.*

Model	A	B	C	HRO Price
MA-40 standard flat base	16"	16"	16"	CALL
MA-550 standard flat base	20"	20"	20"	CALL
MARB-40 Rotor Base	3'	3'	4'	$549.95
MARB-550 Rotor Base	3'	3'	5'6"	$649.95
MARB-770 Rotor Base	3'	3'	6'6"	$779.95
MARB-850 Rotor Base	4'	4'	6'6"	$919.95

- Base dimensions may vary with different soil compositi
- Allow ample time for concrete to cur
- MAB and MARB dimensions are the same.

Rebar is not provided by US Tower. MA-40 & 550 use their standard base as a template. These standard bases use only 2 bolts and require no rebar. Wooden template included with MAB & MARB bases.

Because of wide variations throughout the country in zoning requirements and loading conditions (snow, wind, ice, etc.), it is the responsibility of the customer to make Certain that his Tower conforms to all applicable codes. We recommend you obtain all necessary permits prior to purchase .

The factory reserves the right to make changes or modifications without notice.

MA-SERIES ACCESSORIES

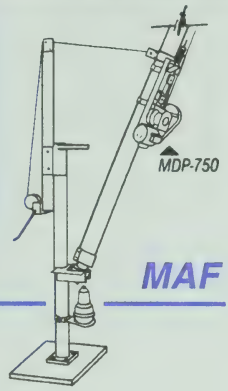
The Customer is Responsible
for obtaining all local city or county building and tower permits
AND
for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.

Model	Description	Weight

MAF Raising Fixture

MAF-Series Raising Fixture accessory for easy raising and antenna servicing. For use with MARB and MAB bases.

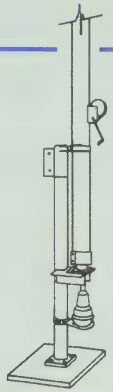
MAF-40	Raising fixture for MA-40	35#
MAF-550	Raising fixture for MA-550	70#
MAF-770	Raising fixture for MA-770	75#
MAF-850	Raising fixture for MA-850	80#



MAF

MARB Freestanding Rotator Base

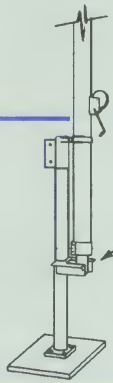
MARB-40	Freestanding rotator base for MA-40 with four 3/4" x 27" anchor bolts and thrust bearing	75#
MARB-550	Freestanding rotator base for MA-550 with four 1" x 36" anchor bolts and thrust bearing	140#
MARB-770	Freestanding rotator base for MA-770 with four 1" x 36" anchor bolts and thrust bearing	195#
MARB-850	Freestanding rotator base for MA-850 with four 1-1/8" x 36" anchor bolts and thrust bearing	280#



MARB

MAB Freestanding Type Base

MAB-40	Freestanding hinged base for MA-40 with four 3/4" x 27" anchor bolts	55#
MAB-550	Freestanding hinged base for MA-550 with four 1" x 36" anchor bolts	119#
MAB-770	Freestanding hinged base for MA-770 with four 1" x 36" anchor bolts	175#
MAB-850	Freestanding hinged base for MA-850 with four 1-1/8" x 36" anchor bolts	180#



Hinging allows for easy installation on both MAB and MARB Bases.

MAB

Coax Standoff Arms

CX-2M	Coax standooff arms for MA-40	4#
CX-3M	Coax standoff arms for MA-550	6#
CX-4M	Coax standoff arms for MA-770	8#
CX-5M	Coax standoff arms for MA-850	10#
IV-16	The IV-16 slips over the top of the mast and rests at the top of the tower to hold inverted vee antennas. The IV-16 cannot be used with the MARB rotator base.	5#

Call Toll-Free for Discounts on U.S. Towers and Accessories

Model	Description	Weight

Motor Drives

MD-75	Heavy-duty motor drive with one HP motor and gear box.	155#
MDP-750	Heavy-duty motor drive with one HP motor, gear bos, and positive pull down.	185#

Remote Control Accessories

RMC-1000	Relay operated remote control for raising and lowering your tower from your ham shack or other remote location.	18#
MCL-100	Limit switch control package includes limit switches, limit switch brackets, and control box at the base of the tower.	7#

TMM SERIES

US Tower's *latest design includes the compact TMM Series towers giving Hams in restricted areas an alternative. The TMM Series has a minimum retracted height of 11'4" (may vary, depending on rotator used) and a maximum height of 47' including mast. At the towers' retracted height, visual impact is reduced to a minimum and antenna servicing is made easier. Typically the tower and antenna are below the roof line of your home when the tower is fully retracted.*

The TMM Series towers are lightweight, freestanding crank-up towers that allow up to 18 square feet of antenna in 50 mph winds per EIA specifications. The TMM-433HD handles 24 square feet. These lightweight towers should provide many years of trouble free service. All of our towers have a hot dipped galvanized finish inside and out.

The TMM-433SS and 541SS must have the rotator top mounted. The TM-433HD will accept the Alliance HD-73 and Telex Ham IV inside the tower. Oversized rotators will prevent full retraction of your tower; however, they may be used if full retraction is not required. This restriction is dependent on location of rotator plate. All TMM Series towers include anchor bolts, rotor plate, hinged T-base, load actuated winch, and eight feet of 2" OD x 120" antenna mast.

The TMM-433SS will accept the MD-75 motor drive accessory. The TMM-433HD and 541SS will accept the MD-75 and MDP-750 accessory motor drives. The MDP-750 motor drive accessory is compatible with both of our MCL-100 and RMC-1000 limit switch packages (see accessories).

TX SERIES

US Tower's *freestanding TX Series crank-up towers are as strong or stronger than most competitors' heavy-duty models. The TX Series towers have 21 foot sections with 4 foot overlap to provide extra height and strength. In addition, the overlap helps prevent binding while lowering your tower in high wind and conditions.*

The TX Series towers have a large enough top section (12 1/2") to permit installation of most rotators inside the section for maximum strength while allowing the section to fully retract. Cross bracing at critical points on the tower ensures safety and additional strength. All US Towers crank-up towers have a heavy-duty, hot dipped galvanized finish both inside and out, which should provide many years of trouble free service.

The TX Series towers come complete with rotator plate and base hardware which includes, large steel anchor bolts and heavy-duty steel T-base that allows the tower to hinge on for easy installation. All T-bases will accept the TRX Series raising fixtures for easy one man installation. All TX Series towers include Fulton hand winches (except MDP and MDLP models) which feature automatic load actuated brakes for maximum safety. Masts and motor drives are available as accessories (see accessory page).

The TX-472MDP comes complete with MDP-750 motor drive and limit switch brackets. The TX-489MDPL includes the MDPL-1000 motor drive and limit switch brackets. Limit switch assemblies and remote raising devices are available (MCL-100) (RMC-1000) for all MDP-750 and MDPL-1000 motor drive units (see accessory page for description).

US Tower's TX Series requires no guying. The wind loading is calculated at 18 square feet of antenna in 50 mph winds per EIA specifications. To assist you in applying for necessary construction permits, Uniform Building Code calculations are available for most models.

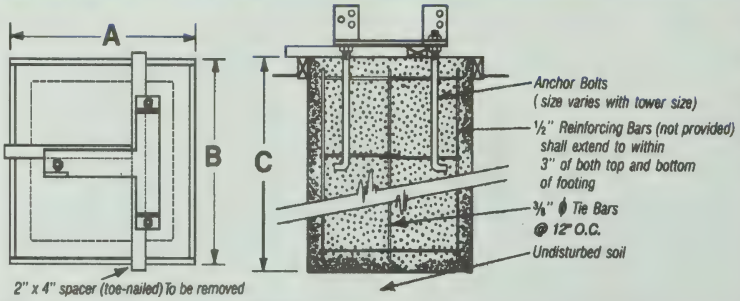
HDX SERIES

US Tower's HDX Series *heavy-duty crank-up towers have up to 2 1/2 times more windloading capacity than others commonly advertised. This superior strength allows for large stacked arrays, while using our commercial type bases and anchor bolts that can be easily installed and vertically adjusted. All HDX Series T-bases are designed to use our TRX Series raising fixtures to make installations and antenna servicing a one man job.*

Modified top sections for the HDR-300 rotators are available at a small additional cost. US Tower carries as accessories many different sizes and strengths of masts which can be used with the HDX Series towers. The HDX-572MDPL and 589MDPL motorized towers provide dual level wind, positive pull down and heavy duty gear box features. The HDX-572MDPL comes only with limit switch brackets. The HDX-589MDPL comes complete with the MCL-100, limit switch package. All towers using MDP-750 and MDPL-1000 motor drives may use the RMC-1000 accessory limit switch package which allows the raising and lowering of your tower from the comfort of your ham shack or any remote location. MCL-100 is also available (see accessory page).

All HDX Series towers come complete with rotator plate, anchor bolts and heavy-duty T-base (doubles as template). US Tower's special T-base design allows the tower to hinge for easy installation. US Tower's crank towers do not require guy wires. The HDX Series towers are rated at 30 square feet of antenna at 50 mph winds per EIA specifications. To assist you in getting a construction permit, Uniform Building Code calculations are available for most towers.

CRANK-UP TOWER BASE INFORMATION



Model	A	B	C
TMM-433SS	3'	3'	4'
TMM-541SS	3'	3'	4'6"
TMM-433HD	3'	3'	5'4"
TX-438	3'	3'	5'
TX-455	3'	3'	6'3"
TX-472	4'	4'	7'
TX-489	4'	4'	8'6"
HDX-538	3'	3'	6'3"
HDX-555	4'	4'	6'6"
HDX-572	4'	4'	8'6"
HDX-589	5'	5'	8'6"
HDX-689	5'	5'	9'6"
HDX-5106	5'	5'	9'6"

SELF-SUPPORTING CRANK-UP TOWERS

Tower Specifications

COMPACT TMM-SERIES CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
TMM-433SS	33' w/o Mast	11'4"	4	315	10"	18"	$1,219.95
TMM-433HD	33' w/o Mast	11'4"	4	400	12.5"	20 7/8"	$1,479.95
TMM-541SS	41' w/o Mast	12'	5	430	10"	20 7/8"	$1,599.95

All Towers handle 18 sq. ft. antenna at 50 MPH winds. TMM-433HD handles 24 sq.

TX-SERIES FREE-STANDING CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
TX-438	38'	21'6"	2	355	12.5"	15"	$1,149.95
TX-455	55'	21'	3	670	12.5"	18"	$1,399.95
TX-472	72'	22'8"	4	1040	12.5"	21 5/8"	$2,799.95
TX-472MDP	72'	22'8"	4	1210	12.5"	21 5/8"	$3,799.95
TX-489	89'	23'4"	5	1590	12.5"	25 5/8"	$4,899.95
TX-489MDPL	89'	23'4"	5	1800	12.5"	25 5/8"	$7,399.95

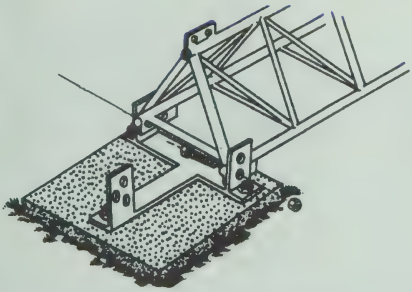
All Towers will handle 18 sq. ft. antenna at 50 MPH winds.

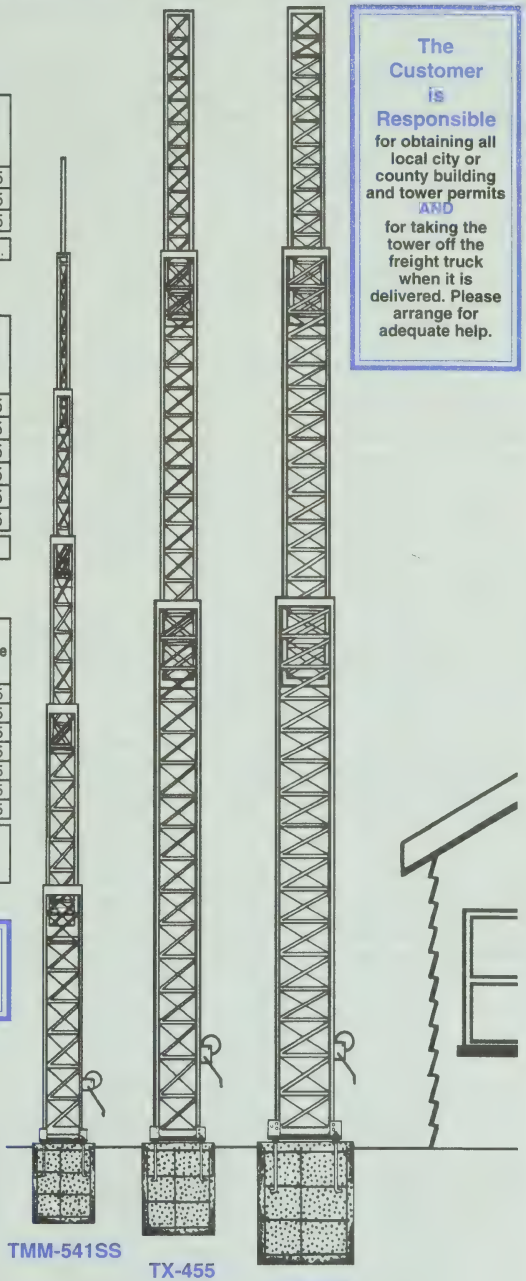
HDX-SERIES HEAVY-DUTY CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
HDX-538	38'	21'6"	2	600	15"	18"	$1,469.95
HDX-555	55'	22'	3	870	15"	21 5/8"	$2,099.95
HDX-572	72'	22'8"	4	1420	15"	25 5/8"	$4,429.95
HDX-572MDPL	72'	22'8"	4	1600	15"	25 5/8"	$6,669.95
HDX-589MDPL	89'	23'8"	5	2440	15"	30 5/8"	$8,869.95
HDX-689MDPL	89'	23'8"	5	3450	18"	37 1/8"	$16,999.95
HDX-5106MDP	106'	24'8"	6	3700	15"	37 1/8"	$18,649.95

All Towers will handle 30 sq. ft. antenna at 50 MPH winds.
HDX-689MDPL rated at 60 sq. ft of antenna at 50 mph winds.
HDX-5106MDPL rated at 35 sq. ft. of antenna at 50 mph winds.

Call Toll-Free for Discounts on U.S. Towers and Accessories





TMM-541SS TX-455 HDX-555

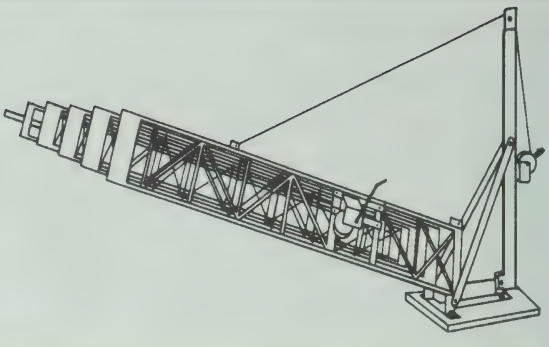
The Customer is Responsible
for obtaining all local city or county building and tower permits
AND
for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.

The factory reserves the right to make changes or modifications without notice.

Raising Fixture

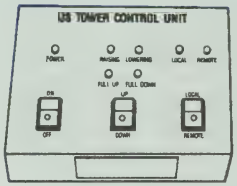
Model	Description	Weight
TRX-80	Standard model tower raising fixture for TMM, TX, and HDX series towers.	120#
TRX-80HD	Heavy-duty model tower raising fixture for TX and HDX series towers.	155#

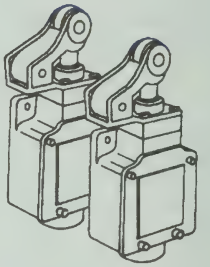
Both TRX-80 and 80HD are designed to be easily mounted on your tower's hinged T-base for quick and safe one-man installation or antenna servicing.



Remote Control

Model	Description	Weight
RMC-1000	Relay operated remote control for raising and lowering your tower from your ham shack or other remote location. The RMC-1000 includes limit switches, limit switch brackets, and two relay boxes. The RMC-1000 can only be used with the MDP-750 and MDPL-1000 motor drives.	18#
MCL-100	Limit switch control package. The MCL-100 includes limit switches, limit switch brackets and control box at the base of the tower. The MCL-100 allows you to raise and lower your tower with automatic shut down when maximum or minimum height is reached. The MCL-100 can only be used with the MDP-750 and MDLP-1000 motor drives.	7#



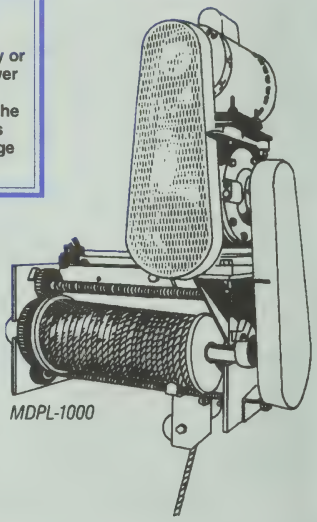


Motor Drives

Model	Description	Weight
MD-75	Heavy-duty motor drive with 1 HP motor and gear box.	155#
MDP-750	Heavy-duty motor drive with 1 HP motor, gear box and positive pull down. US Tower's positive pull down feature is designed to mechanically apply the same strength in the retraction process as is used in the raising of your tower. Positive pull down is very important in lowering your tower in high wind conditions. The MDP-750 differs from the standard motor drive (MD-75) unit which releases tension on the cables allowing the weight of the upper sections to be the only lowering force.	185#
MDLP-1000	Heavy-duty motor drive with 1 HP motor, heavy duty gear box, positive pull down and dual level wind features. Dual level wind is an exclusive US Tower design allowing the cable to wind on the motor drum in a uniform manner. This prevents the cable from overlapping on the drum. For description of positive pull down see MDP-750.	220#

The Customer is Responsible
for obtaining all local city or county building and tower permits AND for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.

Call factory for replacement 1 HP motors, handwinches, limit switches, 3/16" x 7" x 19" and 1/4" x 7" x 19" aircraft cable, anchor bolts, belts, pulleys, sprockets, and modified bases. Tower dolly rentals are available. The factory reserves the right to make changes or modifications without notice.



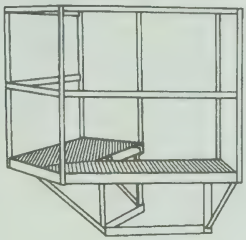
MDPL-1000

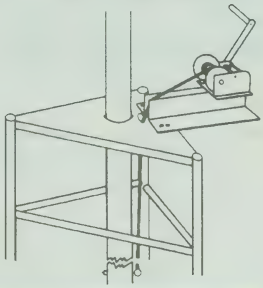
CRANK-UP ACCESSORIES

Model	Description	Weight

Service Platform

HDP	Large service platform with safety railings to provide a safe and comfortable surface while installing or maintaining your antenna and rotator.	125#



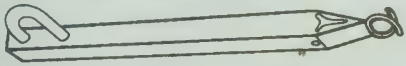


Mast Raising Fixture

MRF	Mast raising fixture with winch and cable that attaches to the top of your tower to assist in raising and lowering your antenna mast.	20#

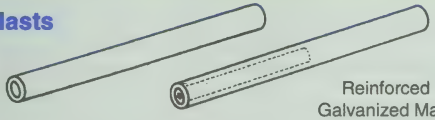
Coaxial Arm Sets

IV-16	The IV-16 slips over the top of the mast and rests at the top of the tower to hold inverted vee antennas. The IV-16 cannot be used with MARB rotator base.	5#



CX-2	Set of 2 coax standoff arms	6#
CX-3	Set of 3 coax standoff arms	8#
CX-4	Set of 4 coax standoff arms	10#
CX-5	Set of 5 coax standoff arms	13#

Masts



Reinforced Galvanized Mast

US Tower offers two different types of masts. The M-5, 10, 15 and 20 masts have .120" wall thickness. The M-15R and 20R have steel pipe inserts in the lower half of the mast which provides extra strength where most needed without adding unnecessary weight in the top portion. The M-15R and 20R have a wall thickness of .250".

Model	Description	Weight
M-5	2" O.D. x 5 foot galvanized mast	14#
M-10	2" O.D. x 10 foot galvanized mast	25#
M-15	2" O.D. x 15 foot galvanized mast	40#
M-15R	2" O.D. x 15 foot reinforced galvanized mast	50#
M-20	2" O.D. x 20 foot galvanized mast	55#
M-20R	2" O.D. x 20 foot reinforced galvanized mast	70#

3/4" x 27"	Anchor bolt with 2 nuts	5#
1" x 36"	Anchor bolt with 2 nuts	10#
1-1/8" x 27"	Anchor bolt with 2 nuts	12#
RP-3	Rotator plate for 10" section	5#
RP-4	Rotator plate for 12.5" section	7#
RP-5	Rotator plate for 15" section	9#

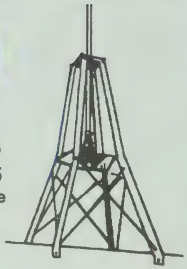
Thrust Bearing

TB-2US	Thrust Bearing for 2" mast, 2 flange holes	10#

Tower Accessories

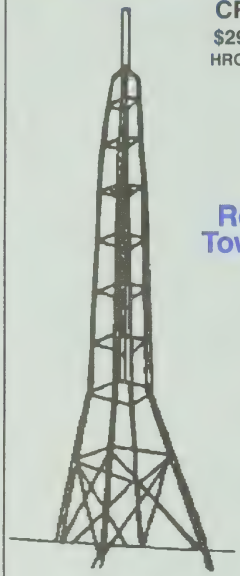
S - Standard
O - Optional

	TX-438	TX-455	TX-472	TX-472MDP	TX-489	TX-489MDPL	HDX-538	HDX-555	HDX-572	HDX-572MDPL	HDX-589MDPL	TMM-433SS	TMM-433HD	TMM-541SS	HRO Price
MASTS															
M-5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	$40.95
M-8												S	S	S	$69.95
M-10	O	O	O	O	O	O	O	O	O	O	O	O	O	O	$77.95
M-15	O	O	O	O	O	O	O	O	O	O	O	O	O	O	$109.95
M-20	O	O	O	O	O	O	O	O	O	O	O				$139.95
M-15R	O	O	O	O	O	O	O	O	O	O	O				$159.95
M-20R	O	O	O	O	O	O	O	O	O	O	O				$209.95
RAISING FIXTURE															
TRX-80	O	O					O	O				O	O	O	$439.95
TRX-80HD			O	O	O	O			O	O	O				$569.95
SERVICE PLATFORM															
HDP			O	O	O	O			O	O	O				$819.95
COAX STANOFF ARMS															
CX-2	O						O								$55.95
CX-3		O						O							$77.95
CX-4			O	O					O	O		O	O		$109.95
CX-5					O	O					O			O	$149.95
MOTOR DRIVES															
MD-75	O	O					O	O				O	O	O	$999.95
MDP-750		O	O	S				O					O	O	$1549.95
MDPL-1000			O		O	S			O		S				$2109.95
REMOTE CONTROL															
RMC-1000		O	O	O	O	O		O	O	O	O		O	O	$999.95
MCL-100		O	O	O	O	S		O	O	S	S		O	O	$469.95
MISCELLANEOUS															
3/4" X 27" bolts	S											S	S	S	$26.95
1" X 36" bolts		S			S	S	S		S	S					$32.95
1-1/8" X 36" bolts			S	S				S			S				$43.95
RP-3												S		S	$39.95
RP-4	S	S	S	S	S	S							S		$47.95
RP-5							S	S	S	S	S				$52.95
MRF	O	O	O	O	O	O		O	O	O	O		O		$269.95
TB-2US	O	O	O	O	O	O		O	O	O	O		O		$99.95
IV-16	O	O	O	O	O	O		O	O	O	O		O	O	$41.95



CR-18
$299.95
HRO Price

Roof Towers



CR-45
$649.95
HRO Price

CR-30
$519.95
HRO Price

Create Roof Towers are constructed of high grade aluminum with galvanized steel bracing for added stability and strength.

The towers will easily accommodate your antenna requirements. The three sizes will support VHF antennas, HF tri-banders and OSCAR systems.

Rotators easily mount inside the towers. An optional thrust bearing (Model #CK46) is recommended. Guying is required on all roof towers. Maximum mast size is 2.5".

Create Roof Towers

Model	Height	Max Antenna Wind Load in FT2	Base Width	Max Vertical Load in lbs.	Tower Weight in lbs.
CR-18	5'10"	21 @ 90 MPH	31 1/3"	440	18
CR-30	9'10"	27 @ 90 MPH	39"	1322	33
CR-45	14'9"	23 @ 90 MPH	39"	881	57

Unarco-Rohn

25G & Accessories

25G	10' tower section.
25AG2	Top secton for use with communication antenna. Mast support tube is 2 1/4" O.D., 36" total length, extending 18" above apex of side rails.
25AG4	8' top section for communication antenna. Upper end terminates in 11" diameter flat, circular plate with a 2 1/4" hole in center.
AS25G	Accessory shelf.
GA25GD	Guy assembly
SB25G	3'4" short base section for concrete.
SBH25G	3'4" hinged short base section for concrete.
BPC25G	Concrete base plate.
BPH25G	Hinged base plate for concrete.
HB25AG	Adjustable house bracket (0-15")
HB25BG	Adjustable house bracket (0-24")
HB25CG	Adjustable house bracket (0-36")
HBU	Universal house bracket (6-30").
TB3	Heavy-duty thrust bearing is recommended for 2" O.D. mast.
WP25G	Work platform.
EF2545	Aluminum erection fixture.

Other accessories available.
Rohn towers shipped truck collect.
Call for information and quotes.

Catalog Prices

HRO discount prices shown are current as of April 1, 1998, when this catalog was assembled. Prices change both up and down. Please be sure to call one of our toll-free numbers or check our Web page for the latest prices.

We at HRO strive to offer the most competitive prices in the industry on a full line of quality ham radio products.

Many manufacturers offer "coupons" or similar promotions. Call or check our Web Page at http://www.hamradio.com for the latest manufacturer promotions.

General Information for Our Valued Customers

Easy Ordering

Six toll-free 800 numbers are available for orders. They are located throughout the United States. This provides personnel at one location or another to answer your questions for extended hours Monday through Saturday. You will find the same low prices at all locations and, thanks to computers, we have the stock levels of all locations available to each salesperson for estimates of availability and delivery.

24 Hour "On-Line" Ordering is now available on the INTERNET! URL is *http://www.hamradio.com*

Shipments are made from any of our 12 locations that has the particular items you need in stock. In most cases, the shipment will be made from the location nearest you (if stock is available). HRO is trying to provide the quickest shipments in the industry using these methods.

California customers can now order using a toll-free number. The number is 1-800-854-6046. It is no longer necessary for California customers to pay for the phone call.

Sales Tax

State and local laws require us to collect and remit State sales / use tax on orders shipped from any of our 12 locations INTO Arizona, California, Colorado, Georgia, or Virginia.

You will find that this small extra charge will be more than overcome by the convenience of the largest ham radio inventories in the United States. You will also find courteous and knowledgeable salespeople to assist you. We think you will find HRO to be the company you want backing you when it comes to dealing with any problems you might have with manufacturers or shipping companies.

Phone Orders

To place a phone order using a credit card, please have the following information available if you are a first-time caller or have not made a recent purchase from HRO. We will ask for your callsign (if any), credit card number, expiration date, your home telephone number, and possibly the name, address, and telephone number of the bank listed on your charge card statement.

Payment

We accept Visa, MasterCard and Discover Card. Personal checks are also accepted; however, processing time will delay shipment by some 10 days. When using a credit card, please have the card in front of you since we will need all the information, including the name of the issuing bank. If the card holder's BILLING address differs from the shipping address, please be sure to specify both addresses and telephone numbers. For your protection, we thoroughly investigate the validity of all credit card purchases.

COD Orders

COD payments must be made in cash, cashiers check, or money order at the time of delivery. There is a small fee for COD shipments.

Commercial Sales Purchase Orders

Written purchase orders will be accepted from city, state, and federal agencies, and, with prior approval of credit, from commercial organizations. HRO quotes, in most cases, prices that require payment on receipt of merchandise. You may find a surcharge for credit terms applied to your pricing. Please indicate that you require terms when calling for price quotes.

Delivery

All Alaska and Hawaii shipments via UPS must be shipped by Blue Label (2nd Day Air) or Red Label (Overnight). Please ask for charges.

In a Hurry? If you find it necessary to expedite shipments, UPS has Red Label (overnight), Blue Label (2nd-day) and Orange Label (3 day) services available at an extra cost. Please request charges for these services.

Foreign Deliveries We ship world-wide. Contact our stores, preferably by fax, with your needs. We can give you quotes and details for placing your foreign order. Payment methods include wire transfer direct to our bank as well as payment by VISA/ MC charge cards or check drawn in U.S. Funds from a U.S. Bank. Shipments are made (depending on size) by UPS, FED EX, Emery, DHL, or international air mail. Some orders to some foreign countries cannot be insured to the full value.

Truck Delivery On day of delivery, if by truck, please be sure to have enough help, and / or proper equipment on hand for unloading merchandise. Truck drivers are NOT required to provide assistance. If you are not experienced at handling large, awkward items such as towers, antennas or amplifiers, please ask properly trained people to assist you.

Canadian Orders can now be shipped via UPS. These costs will be added to your invoice.

Damaged Items

UPS If the item is obviously damaged, note this with the driver and refuse shipment. This item will be returned to HRO and another will be sent at no additional charge. If hidden damage is noted, contact UPS as soon as possible. They will arrange pickup. Once the item is received by HRO, a replacement will be sent.

TRUCK If there is damage or the shipment is short, it is the customer's responsibility to file the claim with the trucking company. At the time of receipt of item, it is recommended that you have the driver write "damaged" or indicate shortage on the bill of lading he gives to you. Be sure to have the same notation as well as drivers signature on his copy also.

MAIL It is the customer's responsibility to file all loss or damage claims with the postal department.

Prices

Many prices shown are suggested list price. In most cases we offer large discounts. Equipment manufacturers constantly change prices, offer specials or react to the Dollar / Yen exchange rates. Simply call one of our 800 numbers and our staff will be happy to quote you the current selling price of the item you are interested in. Prices are subject to change without notice or obligation to the customer. Sorry, we cannot honor typos in this catalog.

Software

Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.

Lost Items

When your order is delivered, please carefully count items and if anything is missing, notify HRO at once.

Occasionally, cartons shipped at the same time will arrive at their destination two or three days apart.

If you notify HRO within 10 days, we will replace lost or damaged items after completion of proper documentation and acceptance by the shipping agency.

New Equipment Returns

Products are not sold for evaluation. Under some circumstances (at the discretion of HRO) and with prior approval of the store of purchase, HRO will accept an item for return. Under most circumstances a 15% restocking fee and all freight charges will be assessed.

Your means of refund for returns will be the same as that used for your original payment except for cash, which will be refunded by check. HRO will pay from its corporate offices. It can take up to two weeks.

Defective merchandise may be returned within 10 days of the original purchase for exchange. Original receipt must accompany the return. Items returned for warranty replacement consideration must also include a completed, signed, "Warranty Replacement Certification Form." Customers who return equipment for replacement consideration without this form completed and signed cannot be considered for any possible warranty replacement, only warranty repair. No exceptions. Contact your salesman for details.

Manufacturer's New Equipment Warranties

Ham Radio Outlet supports all manufacturers' warranties. Actual warranty terms are included within the shipping container of most items. If needed, you may request from any of our locations a free copy of the manufacturer's written terms for any warranteed product. Please request by model number and indicate the page in this catalog that represents the product.

Ham Radio Outlet will in many cases provide in-store repairs; please contact the store of purchase for information. It will be necessary to provide us with the invoice number and purchase date, as most manufacturers need this information to process under their FREE warranty repair terms.

New Equipment Warranty Returns

When returning equipment for repair, please pack the item in original packing material or something similar to provide adequate protection during the shipping process. Note on box: "ATTENTION SERVICE." Include a copy of your purchase invoice, and a complete and detailed description of the problems. Without the invoice or a complete description, delays will be experienced in providing the proper service and returning the item to you. Be sure to insure the package for its replacement cost.

HRO will repair or replace the defective item at our option. If the item is found to be defective under the terms of the manufacturer's warranty, no charge will be made for service or return shipping within continental USA. It is the customer's responsibility to ship all defective items to the service center for warranty repair.

Problems

HRO prides itself in its ability to service the customer. If there is a problem please contact the manager of the store from which you purchased the merchandise. If for some reason, your problem cannot be corrected by that store manager, please feel free to call Ham Radio Outlet Corporate Headquarters at (925) 831-1771 and explain the situation. At this point our national sales staff will see that your problem is corrected.

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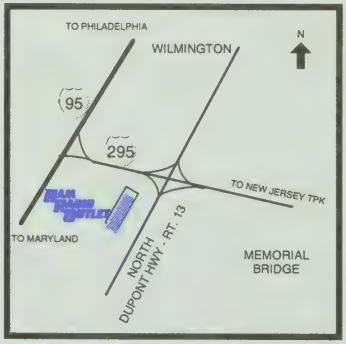

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Jimmy KA3LLL
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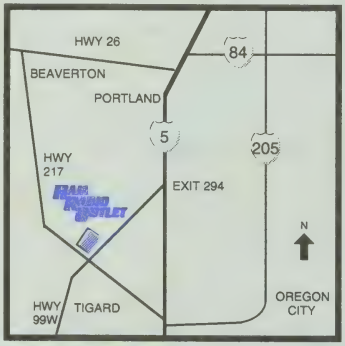

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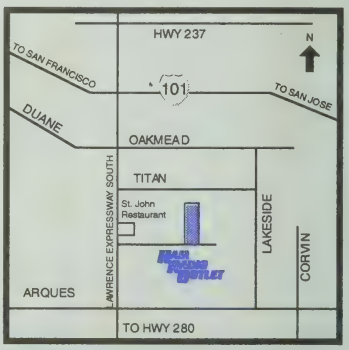

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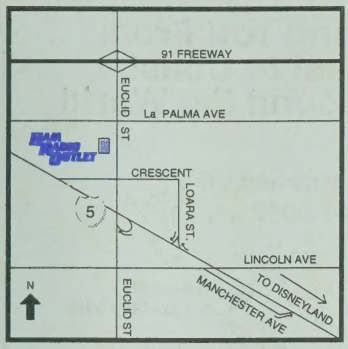

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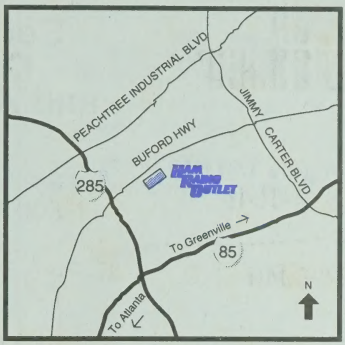

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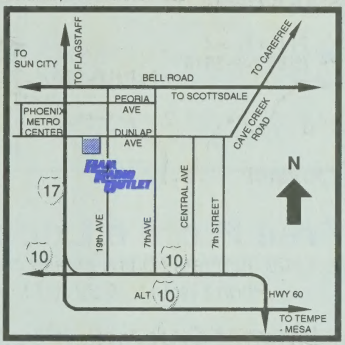

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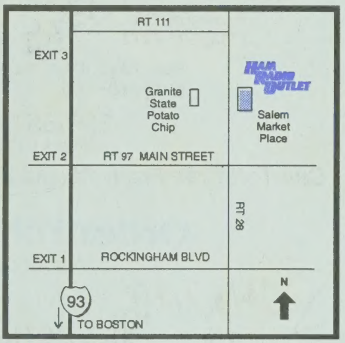

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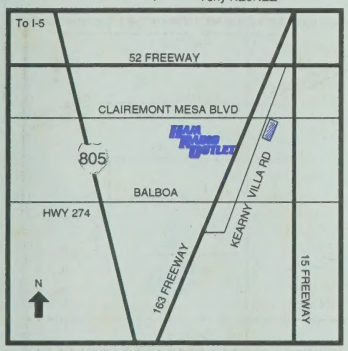

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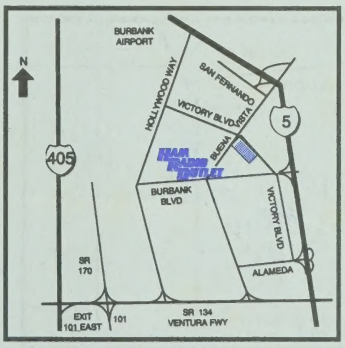

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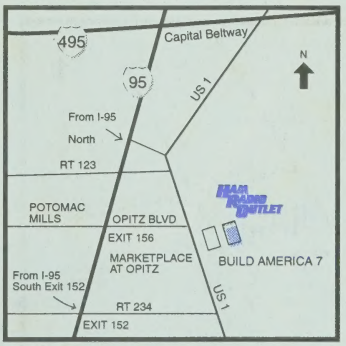

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